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PRACTICAL CONSIDERATIONS IN THE MANAGEMENT OF MALIGNANT BONE TUMORS

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No single problem in the field of orthopedic surgery has been more bewildering than the diagnosis and treatment of malignant bone tumor. This situation has resulted from confusion in the classification of bone neoplasms and from the often hopeless attitude expressed regarding cure. Accurate classification of bone tumors is impossible from a purely clinical standpoint, and the aid of an excellent bone pathologist must be sought in order to properly evaluate each individual case. The confusion has been further increased by the fact that these tumors represent one of the most difficult problems with which the pathologist must cope. Primary malignant bone tumors are rare, and few pathologists can qualify as experts in the field. This results in many mistaken diagnoses, which, in turn, have often resulted in the administration of erroneous definitive therapy. Treatment cannot be intelligently planned or recommended unless an accurate diagnosis is available. How then should the surgeon approach this problem in order to give his patient the best advice possible?

CLINICAL AND LABORATORY DIAGNOSIS

An accurate history and physical examination are important but seldom afford more than a suggestion of the presence of bone malignancy. The next step consists of obtaining adequate roentgenograms of the part or parts involved. While such x-ray studies are indispensable in the study of bone tumors, they do not afford an accurate diagnosis. Even the most expert roentgenologist can offer only a tentative diagnosis or impression to be verified by biopsy. Radical surgery, therefore, attempted on the basis of x-ray diagnosis alone, may accomplish nothing and be extremely disappointing to both the surgeon and the patient. An example of such a possible mistake is clearly shown by the establishment of a diagnosis of metastatic carcinoma after biopsy, when the x-ray characteristics strongly suggested an osteogenic sarcoma. More important is the removal of an extremity for a benign lesion incorrectly diagnosed as malignant.

Laboratory studies should be utilized but are seldom of diagnostic value. The most valuable procedure of this type lies in the acid phosphatase determination, in which elevation specifically indicates metastatic carcinoma of the prostate. Alkaline phosphatase determinations are nonspecific, since elevation is merely an index of bone production. Total and fractional serum protein determinations may often serve as the initial clue in the diagnosis of multiple myeloma. The total proteins are elevated, with the elevation involving the globulin fraction primarily, resulting in reversal of the albumin-globulin ratio. Bence-Jones proteins are occasionally found in the urine, but this is of little value. It should be remembered, too, that the plasma cell myeloma may exist as a single or isolated lesion in cases in which results of all laboratory studies are usually normal. Other laboratory procedures of occasional value are the white blood cell count and the Kahn or Wassermann determinations. The former could be of value theoretically when an early bone infection shows x-ray characteristics suggesting a bone tumor. This is actually of little practical value, however, since early bone infection often suggests an early Ewing's tumor, in which case leukocytosis and low grade fever may also be present. Serologic determinations are of value only in differentiating malignant bone lesions from syphilitic lesions. Positive serologic results, however, do not exclude the possibility of independent primary bone malignancy, and biopsy is justified even in the face of a positive test.

PATHOLOGICAL DIAGNOSIS

After all initial and preliminary studies have been completed, the diagnosis is, as a rule, still in doubt and a biopsy of the lesion is indicated. How then should an adequate biopsy be performed? Simply obtaining small bits of tissue should be discouraged, since it will often result in an erroneous diagnosis. The tissue characteristics may actually vary in isolated peripheral portions of the tumor, and the biopsy must come from a representative area. This should be performed as a major surgical procedure and the excised specimen should include periosteum, with a portion of the extraosseous tumor mass when present, bone, and marrow. Often the

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pathologist must study all these tissues before a diagnosis can be made. In an occasional case, the tumor will be located in a bone structure where complete excision of the lesion is possible by block resection of the segment of bone involved.

Those surgeons who are associated with larger medical centers are often tempted to rely on frozen section studies for diagnosis and thus be able to proceed with definitive treatment at the initial operation. Frozen section diagnosis has only limited value in the problem of bone neoplasms. Obviously material containing bone cannot be used in frozen section. In soft tissue extensions of a neoplasm or in the use of curretted material, an occasional diagnosis can be made; however, the pathologist must have wide experience and be extremely conservative in his interpretation. In most instances the biopsy should be performed, and the surgeon should wait for adequate study and definite diagnosis before proceeding with radical surgery. In those instances where a soft tissue tumor has developed extraosseously, a diagnosis may be available within 24 hours. When studies of the bone itself are required, the present rapid method of decalcification permits an accurate diagnosis within a short period of time. It has often been suggested that such a delay following biopsy may permit or even stimulate dissemination of the tumor through the blood stream. Such a possibility is very remote, has never been proved conclusively, and does not justify the occasional serious mistake that will otherwise be made when radical amputation is resorted to without adequate biopsy studies.

For those surgeons who work in smaller medical centers where a competent bone pathologist is not available, the complete case history, roentgenograms, and biopsy material should be forwarded at once to a competent surgical pathologist. Any pathologist competent to help in this problem is always pleased and honored to receive these case studies and help in the diagnosis. It should be stressed, however, that one should not forward a slide of biopsy material alone, which, in many instances, may be poorly prepared and stained and which often is entirely worthless. The surgical pathologist must and should have all information available and pertinent to the problem before making a diagnosis. This should include a brief history, any significant laboratory findings, the roentgenograms, and the tissues removed at biopsy. Any surgeon, therefore, accepting the responsibility of treatment of patients with malignant bone tumors should acquaint himself with the nearest competent surgical pathologist and make use of his services.

CLASSIFICATION

Practical points that are of value in the correct management of each type of primary malignant bone tumor can best be discussed by considering each type individually. In order to do this intelligently, a rough classification of these tumors is advisable. Ackerman,[1] Coley,[2] Ewing,[3] Hatcher,[4] Lichtenstein,[5] and Luck [6] have given classifications of bone tumors and the common malignant tumors may be classified from a practical standpoint as follows (modified principally from Lichtenstein):

1. Derived from cartilage: chondrosarcoma.
2. Derived from bone: osteosarcoma.
3. Derived from connective tissue:
   a. Fibrosarcoma.
   b. Malignant giant cell tumors.
4. Derived from mesenchymal connective tissue, or possibly from the reticuloendothelial system: Ewing sarcoma.
5. Derived from hematopoietic tissue:
   a. Multiple myeloma.
   b. Reticulum cell sarcoma.
   c. The leukemias.
   d. Hodgkin's disease.

Practical points of value to the surgeon will be discussed for each type, in order, and will include pertinent known facts with reference to the age group and portion of the bone structure most frequently involved, x-ray characteristics usually consistent with each type, and the method of treatment recommended.

Chondrosarcoma.—Chondrosarcoma is a primary bone neoplasm that is usually encountered in young adult life but may also occur in adolescence. Tumors of this type may occur in later years, developing secondary to preexisting benign cartilaginous tumors such as the enchondroma or osteochondroma. The bones most commonly involved are the long bones at their extremities, the innominate bones, and the ribs. Roentgenologically the central chondrosarcoma may be characterized by irregular mottling and spotty partial calcification in a radiolucent cavity and in which there is often some cortical expansion and some beginning erosion of the overlying cortex. When the tumor is located peripherally, it is identified by an irregular shadow or mass in which the central portion shows irregular calcification and ossification, covered by a moderately dense soft tissue shadow that represents the expanding uncalcified cartilaginous portion of the neoplasm.

Treatment should consist of amputation or rarely wide local resection in those bones where local excision seems feasible and preferable. If local resection is possible and chondrosarcoma is suspected, it should probably be removed as the initial biopsy specimen rather than an attempt being made to remove a small segment of the tumor as a preliminary procedure. The spread of tumor cells in such a wound may jeopardize the success of a subsequent local resection. Roentgen therapy has no place in the treatment of these tumors. The prognosis undoubtedly varies with the degree of malignancy that is present. O'Neal and Ackerman [7] have reported a series of 40 cases in which the degree of malignancy was divided into three classes, mild, moderate, and severe. The prognosis in this series was directly proportional to the grade of malignancy. With initial adequate surgery, cure can be expected in a respectable proportion of cases.

Osteosarcoma.—Osteosarcoma usually develops in the adolescent or young adult, between the ages of 10 and 25 years, but is of course not limited to this group. An osteosarcoma in older persons occasionally develops in a preexisting bone disease such as Paget's disease. It

1. Ackerman, L. V.: Surgical Pathology, St. Louis, C. V. Mosby Co., 1953.
2. Coley, B. L.: Neoplasms of Bone and Related Conditions: Their Etiology, Pathogenesis, Diagnosis, and Treatment, New York, Paul B. Hoeber, Inc., 1949.
3. Ewing, J.: A Review of the Classification of Bone Tumors, Surg., Gynec. and Obst. 68: 971, 1939.
4. Hatcher, C. H.: The Diagnosis of Bone Sarcoma, Rocky Mountain M. J. 45: 968, 1948.
5. Lichtenstein, L.: Bone Tumors, St. Louis, C. V. Mosby Co., 1952.
6. Luck, J. V.: Bone and Joint Diseases, Springfield, Ill., Charles C Thomas, Publisher, 1950.
7. O'Neal, L. W., and Ackerman, L. V.: Chondrosarcoma of Bone, Cancer 5: 551, 1952.

usually develops in the ends of the long bones, the metaphyseal region, but may appear in any bone structure. It is commonest in the lower end of the femur, the upper end of the tibia, and the upper end of the humerus in this order. Roentgenologically, these tumors may be osteolytic or osteoblastic in type. The osteoblastic type may be characterized by a central sclerotic mass of new bone with no definite break in the cortex and with no associated soft tissue tumor. In the typical well-developed tumor there is usually evidence of bone destruction, with a distinct periosteal tumor mass. The so-called "sun-ray appearance" resulting from perpendicular striations of periosteal new bone has long been erroneously considered as pathognomic of osteosarcoma. This characteristic may occasionally be found in other bone malignancies, primarily in Ewing's sarcoma and metastatic carcinoma.

The prognosis in osteosarcoma is extremely grave. Amputation represents the treatment of choice, in fact offers the only hope for survival, and should be performed as soon as the diagnosis has been established. The usual rule governing the site of amputation is that it should be performed proximal to the bone involved. This has been determined by the fact that recurrence of the tumor has occasionally been reported in the amputation stump when amputation has been performed through the involved bone. The only possible exception to this rule is represented by the osteosarcoma in the lower end of the femur. Since disarticulation of the hip is so much more disabling than an amputation through the proximal third of the femur, the latter seems justified unless tumor is actually identified grossly in the marrow cavity at the elected site.

Fibrosarcoma.—Fibrosarcoma may be encountered at any age but it is probably commonest in early adult life. It can occur in any bone. This tumor may be endosteal or periosteal in origin, and Phemister [8] states it is more frequently primary in the medullary cavity. Roentgenologically the central fibrosarcoma is characterized by a cyst-like area with indefinite margins that eventually show erosion and destruction of the overlying cortex. It may be irregular in appearance, but it does not, as a rule, show the mottling found in the central chondrosarcoma. The periosteal type is usually characterized by a soft tissue shadow overlying the cortex, which is nonossifying in type and in which erosion and destruction of the adjacent bone become apparent.

Treatment of these tumors is surgical, and early amputation is indicated when the tumor is located in the extremities. Hemipelvectomy is justified when the innominate bone is involved. Wide local resection may be justified in some instances, especially in those bones where amputation is not possible. While the prognosis is considerably better than in osteosarcoma, it is still not good. Again the outlook varies with the degree of malignancy, as shown by careful study of the tissues.

Malignant Giant Cell Tumor.—The giant cell tumor is usually encountered in adults and exists in a benign as well as malignant form. The malignant giant cell tumor is relatively rare and may, of course, develop in a tumor previously considered benign. The common sites for this tumor are the lower end of the femur, the upper end of the tibia, and the lower end of the radius, but they have been reported in other areas. The roentgen appearance of a multilocular cystic area located in the end of the long bone has at times been thought to be pathognomic of the giant cell tumor. This, however, is not always true, and it is impossible to accurately differentiate it from other malignant tumors on the basis of roentgen characteristics alone. In addition to the rarefaction, there is usually eccentric thinning and expansion of the cortex.

Treatment of the benign giant cell tumor is preferably surgical, with resection or thorough curettement, although in some clinics roentgen therapy is still used. In some locations where resection or curettement is not feasible, such as the vertebrae, irradiation is preferable. When such a tumor continues to recur and its malignancy is definitely proved, amputation represents the procedure of choice. In these locations where amputation may conceiveably be unfeasible, wide resection should be attempted. The prognosis in this malignant tumor is reported to be poor (Lichtenstein), making it conform to the pattern of other primary bone malignancies.

Ewing's Sarcoma.—The age incidence of Ewing's sarcoma is between 10 and 25 years, as a rule, and it usually occurs in childhood. It is usually encountered in the shaft of a long bone, but may be encountered elsewhere. Roentgenologically there is no characteristic appearance for the Ewing's tumor. The so-called "onion peel" appearance that results from superimposed layers of periosteal new bone is no longer considered diagnostic and may be encountered in other destructive bone lesions. This finding may be present, but it is also possible to have irregular bone destruction and cortical mottling without evidence of periosteal reaction.

Treatment of Ewing's sarcoma is still a debated question. Radical surgery in the form of amputation is certainly open to question, and results equally as good can probably be obtained with roentgen therapy alone. The Ewing's sarcoma for which the patient initially consults a physician probably represents only the initial manifestation of a diffuse systemic disease. So-called metastases frequently encountered in this problem are probably not metastases from the initial lesion but represent, instead, independent lesions developing in conjunction with progression of the systemic disease. Since the prognosis is so extremely grave, and since the tumor is radiosensitive, roentgen therapy would seem to offer as much hope as surgery. Amputation, therefore, should be limited to those instances in which the indication arises from persistent open ulcerations or uncontrollable pain.

Multiple Myeloma.—Multiple myeloma represents a tumor of adult life, usually occurring between the ages of 40 and 60 years. As the title indicates, the skeletal lesions are wide-spread, and actually every bone in the body may become involved. In the classical case, roentgenograms reveal multiple osteolytic lesions of the long bones and ribs, which, when of sufficient size, will show erosion and thinning of the overlying cortex. Pathological fractures are common. In the spine, destruction of one or more vertebrae, with partial or even complete collapse, is not uncommon. The skull may show numerous punched-out areas of rarefaction. While these bone changes may be found in the more advanced classical

8. Phemister, D. B: Cancer of Bone and Joint, J. A. M. A. **136**: 545 (Feb. 21) 1948.

case, the early stage of the disease may show only a moderate diffuse osteoporosis involving the spine primarily.

It is often possible to establish a definite diagnosis without biopsy of a bone lesion. As stated previously, elevation of serum protein with a reversal of the albumin-globulin ratio may furnish the initial clue to the diagnosis. This can often be further substantiated by a study of marrow obtained from sternal puncture. In occasional cases, however, it may be necessary to proceed with a biopsy before the diagnosis is established. This is especially true when the disease is localized at the onset, presenting evidence of a solitary tumor.

Treatment is primarily palliative in type. Roentgen therapy often relieves pain and should be used. Urethane may be of value in controlling the progression of the disease. Protection against pathological fractures is of primary importance, and any such fractures should, of course, be treated in the event they occur. Decompression of the spinal cord may be necessary when evidence of pressure exists. Amputation of an extremity may occasionally be justified in the presence of a large solitary type of myeloma or late in the disease for relief of pain associated with pathological fractures and extensive scarring and ulcerations resulting from roentgen therapy. The prognosis is invariably poor but varies tremendously in different cases. Fatal termination may follow very rapidly within a few months, but with adequate supportive therapy, other patients may survive for 10 years or more.

Reticulum Cell Sarcoma.—Reticulum cell sarcoma represents a rare malignant tumor that in some respects is similar to Ewing's sarcoma although it occurs in a much older age group. It usually involves the long bones and may appear in metaphyseal as well as the diaphyseal regions. It may be characterized by irregular bone destruction and evidence of sclerotic new bone formation, with "fuzziness" of the cortical outline.[9]

In the treatment of these tumors, amputation and roentgen therapy have both been advised. Like the Ewing's sarcoma, however, the local bone lesion may represent only the initial manifestation of a systemic disease. (In a recent case, a lesion of this type in the femur was treated by radiation therapy and in less than three months obstructive jaundice developed. Exploratory laparotomy revealed a similar tumor completely replacing the head of the pancreas.) Since the reticulum cell sarcoma is radiosensitive, roentgen therapy may be preferable. The prognosis is better than that of Ewing's sarcoma, and Sherman and Snyder have reported five year cures in 5 of a series of 17 cases.

SUMMARY

An attempt has been made to evaluate the problem of malignant bone tumors from the standpoint of the surgeon, who must, as a rule, make the final decision regarding their treatment. The history, physical examination, roentgen studies, and laboratory studies play essential but very limited roles in the diagnosis of these bone lesions. In most instances, an accurate diagnosis must await surgical biopsy and study of the excised tissue by a competent pathologist. The all-important role of the pathologist cannot be over-emphasized, since the treatment to be advised depends on the exact nature of the tumor. The commonest types have been discussed from a clinical standpoint, with suggestions regarding their treatment. The use of generalities in this problem is impossible, but it may be safely stated that amputation represents the preferred therapy for the osteosarcoma, chondrosarcoma, fibrosarcoma, and malignant giant cell tumors. Roentgen therapy, on the other hand, is advisable in multiple myeloma, and probably offers as much hope for cure in Ewing's sarcoma and reticulum cell sarcoma.

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9. Sherman, R. S., and Snyder, R. E.: Roentgen Appearance of Primary Reticulum Cell Sarcoma of Bone, Am. J. Roentgenol. **58**: 291, 1947.

PUBLIC HEALTH PROBLEMS IN SYPHILIS CONTROL

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Several factors affect the incidence of syphilis. The number of infectious cases in the population, sexual promiscuity, the high rate of communicability and mass shifts in population, such as those caused by mobilization, militate towards its increase. Conversely intensive casefinding, including contact investigation, public education and mass testing, diagnosis and treatment, prophylaxis, and other preventive measures, militates towards its reduction.

Chart 1 shows the rapid decline of early syphilis in the United States since 1947. The decline in the estimated annual minimum incidence of syphilis derives mainly from more than a decade of intensive effort to find and treat persons with the early stages of the disease. They are not easy to find. Over the years a method of early case finding known as contact investigation has been developed and refined. Early syphilis patients are interviewed to obtain names, addresses, and other identifying data of all their sexual partners. Skilled investigators use this information to find and bring to examination each of the contacts named or indicated during the interview. Those found to be infected are treated and, in turn, are interviewed for their sexual contacts, thus continuing and extending the epidemiological process.

The success of outpatient treatment with the newer penicillin schedules has virtually eliminated the inpatient treatment center and has increased the potential role of the private physician. It has also presented a new problem in syphilis control. In the inpatient center the contact interviewer had time to interview and reinterview, if nec-

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essary, all syphilis patients. Outpatient therapy, however, allows very little interview time and almost precludes the possibility of the interviewer's becoming acquainted with his patient. For that reason, the selection and training of interviewers has been given increased attention.

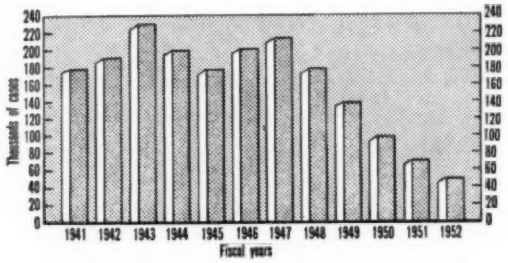

Chart 1.—Estimated annual minimum incidence of syphilis among civilians in the Continental United States from 1941 to 1952.

Indexes for measuring the effectiveness of contact interview and investigation have been developed and provide comparative analyses between localities, states, and regional areas. Chart 2 presents the national trend of two of these indexes from January, 1946, through December, 1951. The lower or contact index curve shows the number of contacts obtained per case of primary or secondary syphilis admitted to public clinics or rapid treatment inpatient facilities. In 1946 the contact index was 1.6. It increased gradually to 3.4 contacts per patient in 1950. It decreased slightly during 1951. One of the indexes for determining the efficiency of contact investigation is the percentage of total contacts reported who were located and brought to examination. The upper curve in chart 2 indicates that the percentage examined increased slowly from 53% in 1946 to 67% in 1951. That this curve has not kept pace with the rise in the contact index may indicate the need for greater emphasis on training in investigative techniques.

These data refer to health department cases only. There is insufficient data to make any analysis of the number of contacts obtained per case by private physicians. Just as outpatient treatment has increased the potential of the private physician in the venereal disease control program, so also it has increased the need for careful interviewing of private physician patients. It would be unfortunate indeed if the benefits promised by outpatient treatment and increased responsibility of the private physician in the venereal disease control program were to be dissipated by a failure to increase the case-finding opportunity proportionately.

Private physicians are busy, and interviewing for contacts is an arduous task. Some private physicians do interview for contacts and do encourage in various ways diagnosis and treatment for those contacts. It should be possible to expand this practice. Where the private physician feels that he cannot undertake such activity, he may take advantage of the expert and confidential contact interview and investigation service of his health department. In many areas health departments now are doing this job for private physicians who request it. For every early case of syphilis diagnosed in the private physician's office, just as in the clinic, there is one infected contact or more who should be under treatment. Syphilis can never be controlled in this country without the continued assistance of the private physician. The basic casefinding device is interview and investigation.

In the casefinding and prevention program public education is not an isolated device, but rather the unifying principle of the entire program. Every basic activity of the control effort—interview, investigation, diagnosis, and treatment—is essentially an educational opportunity. All public appeal insofar as possible derives from the service effort. Every individual in the program is an educator. In addition, overt educational activities have two fundamental objectives: to alert the public to the problem and to sell the service that solves the problem. In this effort every mass communication channel, every institutional outlet, and every organization avenue is utilized. The fact that many patients who suspect syphilis report voluntarily to private physicians or public clinics is an indication that the educational effort is reaching the public and that the service it sells is being accepted.

Mobilization for defense has created an additional opportunity for venereal disease control. It is a phenomenon of our time that venereal disease rates have declined consistently during a period of mobilization. This phenomenon develops logically from the fact that, when the mobilization period began, health departments were prepared for it. They had casefinding and prevention techniques that had proved their effectiveness. They had reliable methods of diagnosis and effective treatment. There was a tried and efficient working relationship among state and local health departments, the military, the United States Public Health Service, and voluntary organizations.

In order to insure that all infected armed forces personnel are interviewed for information about contacts, there are 150 public health representatives assigned, in cooperation with state and local health departments, to military establishments, defense-impacted areas, and recreational areas frequented by military personnel and defense workers. These men are specially trained in interviewing and investigative methods. Also, many military personnel attached to the medical departments have been trained in schools for contact interviewing. In addition to their responsibility to interview all infected personnel, the health representatives in many establishments conduct educational programs for the military, and also assist the local health officer in venereal disease control among the civilian population in the area.

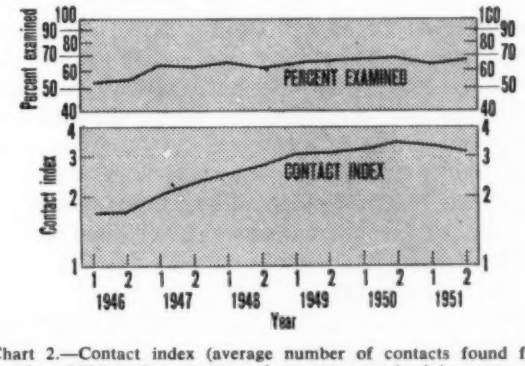

Chart 2.—Contact index (average number of contacts found for each case of syphilis) and percentage of contacts examined in cases of previously untreated primary and secondary syphilis in public institutions from 1946 to 1951.

As early syphilis gradually is brought under control in this country, one must remember that the increase in

international mobilization and the ease of international travel increases the likelihood of importing syphilis from foreign countries where early syphilis is not under control. The importation of syphilis is a real threat, which, if not checked, could undo the efforts to control syphilis and even result in sporadic epidemics in different parts of the country. A physical inspection program already has been established on the Mexican border to screen all workers entering the country for employment. Laborers with suspicious lesions or discharges indicating the possibility of venereal disease are given 2,400,000 units of penicillin and a sample of blood is taken. Although this is not an adequate program in itself, it is a step in the right direction to control the importation of syphilis.

Although the results of casefinding of early syphilis have been most gratifying in terms of the consistent decrease in the number of infectious syphilis cases being reported, there remains a huge reservoir estimated at 2,100,000 persons with latent and late syphilis in the population who must be discovered and brought to treatment. Otherwise a considerable proportion of these patients will become public charges in mental institutions, city and county hospitals and on the pension rolls of aid-to-the-blind programs. It is, of course, difficult to estimate the end results of untreated syphilis in this

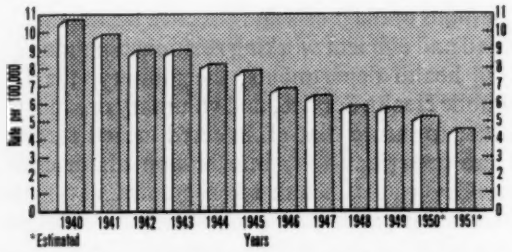

Chart 3.—Mortality rate due to syphilis per 100,000 population in the Continental United States from 1940 to 1951.

group. Brusgaard's unique study demonstrated that late manifestations in untreated syphilis would develop in about 12% of the cases, in 4% in the central nervous system and in 8% in the cardiovascular system. On the basis of these data it is estimated that unless the 2,100,000 syphilitic persons that make up the reservoir are found and treated, late manifestations will develop in a total of 250,000 cases.

One reason for concern with this reservoir is the financial burden of institutional care of the mentally disabled as a result of syphilis. This concern and the venereal disease control activities flowing from it have been justified over the years. In 1951 there were 41,000 persons with psychoses due to syphilis in tax-supported institutions in the United States. The cost of their care for that year is estimated at $41,500,000.

In 1936 there were approximately 92,000 such persons in tax-supported institutions. If venereal disease control had not reduced sharply the rate of admissions, there would have been in 1951 at least 92,000 persons with psychoses due to syphilis in tax-supported institutions. The estimated cost of their care would have been $86,400,000.[1]

Although trends in incidence, prevalence, and reported morbidity are good indications as to the results of the

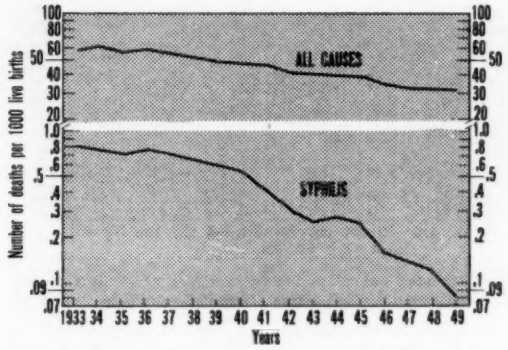

Chart 4.—Infant mortality from syphilis and from all causes in the Continental United States from 1933 to 1949.

venereal disease control program, the best evaluation of the long-range results of the program is provided by data showing the decrease in disability and mortality due to syphilis. Chart 3 shows the syphilis death rate per 100,000 population in the United States from 1940 to 1951. The steady decrease year after year of deaths due to syphilis is most encouraging, but there were still more than 7,000 deaths from syphilis during 1951. In 1940 the death rate was 10.7, and it has been reduced to an estimated 4.7 during 1951, a reduction in the 12 year period of more than 50%. This has occurred in spite of the fact that available evidence indicates a decrease in the reluctance of reporting syphilis as a cause of death. The reduction in infant mortality due to syphilis is even more striking. Chart 4 presents the number of infant deaths due to syphilis per 1,000 live births from 1933 through 1949. It is estimated that the infant death rate due to syphilis was 0.06 per 1,000 live births in 1950, a decrease of about 92% from the 1933 rate of 0.79 per 1,000 live births. It is interesting to note that the infant mortality rate due to syphilis has been reduced much more markedly than the infant death rate from all causes.

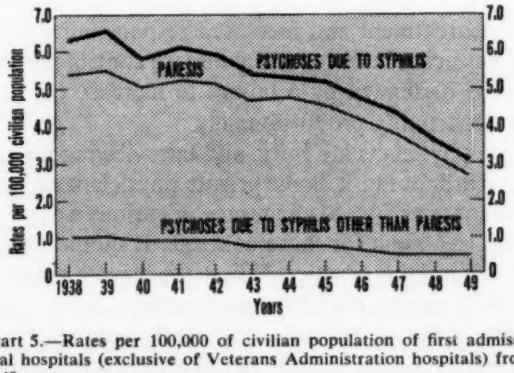
PARESIS
PSYCHOSES DUE TO SYPHILIS
PSYCHOSES DUE TO SYPHILIS OTHER THAN PARESIS
Rates per 100,000 civilian population
1938 39 40 41 42 43 44 45 46 47 48 49
Years

Chart 5.—Rates per 100,000 of civilian population of first admissions to mental hospitals (exclusive of Veterans Administration hospitals) from 1938 to 1949.

The reduction in disability due to syphilis is indicated by the trends in first admissions to mental hospitals due to syphilis. Chart 5 depicts the rate per 100,000 civilian population of first admissions to mental hospitals due to syphilis. This rate has been cut in half. In 1940 the rate

1. These estimates combine nonveteran and Veterans Administration institutional costs per patient. The more extensive Veterans Administration service costs somewhat more than service in nonveteran institutions. There were also proportionately fewer syphilitics in Veterans Administration mental institutions in 1936 than in 1950. Hence the estimated cost of their care would be at a somewhat lower rate than for the 41,000 persons in 1951.

was 6.1 per 100,000 population, and by 1949, the most recent year for which we have figures, the rate had been reduced to 3.0 per 100,000 population. In spite of these encouraging results of the control program as measured by the significant decreases in mortality and disability due to syphilis, health departments must continue to ferret out cases of latent and late syphilis from the population to decrease the syphilis reservoir and to insure that the encouraging downward trends continue in the future.

Three factors seem to stand out in surveying the present venereal disease control problem. 1. The venereal disease control program becomes more and more one of finding and treating persons with latent and late stages of syphilis in order to prevent disability and premature death. 2. Outpatient treatment will characterize treatment activities in the future. This fact, without any planning impetus from health agencies, brings the private physician into the control picture in a very responsible position. 3. In order to serve the private physician competently in the coming years, it will be necessary for health departments to provide him, if he wishes, with contact interview and investigative skills. In addition to that it will be important for the medical schools throughout the country to alert their undergraduate and graduate students to the essential role of the private physician in the continuing venereal disease control program. It will also be important that these medical students, soon to embark on careers in American communities, be familiar with the services their health departments have to offer them in meeting their responsibility in venereal disease control.

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CHANGES IN RELATIVE PREVALENCE OF VARIOUS TYPES OF HEART DISEASE IN NEW ENGLAND

CONTRAST BETWEEN 1925 AND 1950

Paul D. White, M.D., Boston

In 1923, 1924, and 1925, Dr. T. Duckett Jones and I analyzed 3,000 cardiac cases in New England to determine the relative prevalence of the various kinds of heart disease.[1] One thousand occurred in hospital patients, of whom 500 were outpatients and 500 were ward patients; 1,000 occurred in patients from the practices of 10 able internists (100 consecutive cases each), and 1,000 were consecutive cases from my own consulting practice. Twenty-five years later, in 1948, 1949, and 1950, I collected another 3,000 cases in exactly the same way. The table shows the relative incidence of the various types of heart disease that occurred in each series. In the first series, we found that the greatest percentage were cases of rheumatic heart disease, with hypertensive heart disease second and coronary heart disease, as represented by angina pectoris and coronary thrombosis, third. At that time, we included under the designation "arteriosclerotic" heart disease many cases that we would not now call "coronary" heart disease, such as the occurrence of atrial fibrillation in patients over 50 years old. All the other kinds of heart disease showed low percentages; these included cardiovascular syphilis, congenital defects, cor pulmonale, subacute bacterial endocarditis, and thyrotoxic heart disease.

Relative Prevalence of Various Kinds of Heart Disease in New England in 1925 and 1950

Type	1925, %	1950, %
Congenital	1.5	7.9
Rheumatic	39.5	23.5
Subacute bacterial endocarditis	1.9	1.2
Syphilitic	3.9	1.0
Cor pulmonale	0.9	1.1
Hypertensive	29.2	26.2
Coronary *	20.2	48.5
Thyrotoxic	2.9	0.5

* "Arteriosclerotic" heart disease had been diagnosed in 35.7%, who included, in addition to patients with angina pectoris and coronary thrombosis (17.5%) and relatively few patients with atrioventricular block (34 patients) and bundle branch block (45 patients), many other older persons with auricular fibrillation, tortuosity of the aorta, or heart failure without obvious cause.

CONTRAST BETWEEN 1925 AND 1950

There are five points of contrast between the two series that are especially interesting. First, rheumatic heart disease, formerly in first place, has now dropped to third (from 39.5% to 23.5%), and this is the general experience throughout the country, despite a current flare-up of the acute process in some areas. This drop in relative prevalence is, incidentally, in keeping with the drop in absolute mortality from rheumatic heart disease as indicated by statistics for the whole United States. How best to explain this drop in rheumatic heart disease is not clear. Personally, I believe, for several reasons, that improvement in social conditions and in the way of life, with decrease in slum areas throughout the United States, has had an important bearing. In the first place, the decrease began before preventive measures with the antibiotics or possible "specific therapy" with corticotropin and cortisone came into use. Secondly, 25 years ago we found much more rheumatic heart disease among the school children who lived in the crowded sections of Boston than among those who lived in the pleasanter suburbs. Finally, in both the early and the recent series of cases, there was much more rheumatic heart disease in the hospital outpatient department and open ward cases than in my own private practice, the ratio being about 2 to 1. It is possible, also, that the natural history

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The following physicians aided in gathering the data for this report from their own practices: Drs. E. L. Amidon, Burlington, Vt.; Alex M. Burgess, Providence, R. I.; Donald Clark, Peterboro, N. H.; S. M. Gundersen, Hanover, N. H.; E. E. Kattwinkel, Auburndale, Mass.; H. C. Knowlton, Bangor, Me.; John E. Martin, Norwich, Conn.; William Mason, Fall River, Mass.; Paul Nathan, Holyoke, Mass.; and Charles Walcott, Cambridge, Mass. Misses Marion H. Bunker, Helen Donovan, and Eleanore A. Lewis assisted with the hospital cases.

1. White, P. D., and Jones, T. D.: Heart Disease and Disorders in New England, Am. Heart J. 3: 302 (Feb.) 1928.

of the disease, with a spontaneous reduction, may explain some of the change. At any rate, whatever the cause, we can feel much encouraged and, while continuing our strenuous efforts at control, look hopefully to the future, when, a generation or two from now, a condition such as mitral stenosis may become a relative rarity and when there may be little or no need for the mitral valve surgeon.

The second striking change has been in the relative and total great increase in coronary heart disease, which, in third place in New England in 1925, has now assumed first place by a wide margin (coming up from 20.2% to 48.5%). A tremendous challenge is presented by this serious change, the exact cause or causes of which remain unsolved. An increased length of life and more accurate diagnosis undoubtedly play a role but do not, I believe, suffice to explain such a great increase. Many young and middle-aged men as well as old men and women are affected, and the diagnosis was easily made 25 years ago. It appears that this same problem faces every country as it becomes "more advanced" in its way of life, with control of the infectious diseases and the replacement of undernutrition and hard physical labor by overnutrition and the use of labor-saving devices, like the automobile and push buttons. Again a comparison of the hospital cases with my own in the two series is of interest; the ratio 25 years ago was a little less than 1 to 2 and in the recent series a little more than 2 to 1. In the earlier series there were only 7 patients with angina pectoris among 1,000 hospital patients, while there were 42 in my private consultation patients, and, in the recent series, these figures were 37 and 325, respectively.

The third important change is the felicitous and striking decrease in morbidity and mortality from cardiovascular syphilis in New England (from 3.9% to 1%). The explanation for this is simple and is found in the education of the population at large about venereal disease, the early diagnosis and adequate treatment of primary syphilis with penicillin, and, also, the earlier diagnosis and vigorous treatment of cardiovascular syphilis itself. Nowadays, we rarely see a syphilitic aortic aneurysm at the Massachusetts General Hospital in Boston, and in another generation cardiovascular syphilis should be, in New England, simply an historic disease of the past, as it can become in any part of the world.

The fourth interesting change is the apparently remarkable increase of congenital cardiovascular disease, from 1.5% to 7.9%. I do not for a moment believe that this apparent increase is real. It can be explained by two factors. In the first place, the diagnosis of congenital defects of the heart and great vessels is much more accurate than it was 25 years ago, such relatively common conditions as coarctation of the aorta and atrial septal defects having been missed altogether or called something else. Secondly, many patients, especially the "blue babies," formerly were rarely seen in the clinics or even in physicians' offices, since there was nothing that could be done for them 25 years ago, and so they remained as hopeless cripples at home in town or on the farms. Now, parents flock to the hospitals with them, with the justified hope that they may be helped.

Finally, owing to the great improvement in the recognition and early adequate therapy of thyrotoxicosis in New England, serious effects of that disease on the heart are now seldom seen, thyrotoxic heart disease having dropped in relative incidence from 2.9% 25 years ago to 0.5% or less now. In fact the young physician of today can hardly imagine that at one time there were always such patients in the hospital wards. It was the bold surgery of Frank Lahey, with Burton Hamilton's cooperation, that proved the possible reversibility of thyrotoxic heart disease. So, also, to a lesser extent, other endocrine disorders are now preventable or essentially curable.

Before concluding, I should add that certain kinds of heart diseases have not shown so great a change, up or down, as has been the case with the five types noted above, although, owing to the total or absolute increase in cardiovascular diseases as a whole, they would seem to be commoner than 25 years ago. Among these are hypertensive heart disease, the cor pulmonale, and acute, chronic, and subacute bacterial endocarditis. These causes of illness and death still present a challenge.

CONCLUSIONS

A comparison of the relative prevalence of the various types of cardiovascular disease a quarter of a century ago and now affords us, at the same time, both a feeling of satisfaction about certain accomplishments, as in the case of cardiovascular syphilis, rheumatic heart disease, and thyrotoxicosis, and a tremendous challenge for the future. The challenge is felt especially in the apparent great increase of coronary heart disease in the United States, in the unrelenting persistence of the strain of hypertension, and in the greater and greater numbers of children and young adults who are seeking help for the correction of congenital defects of the heart and great vessels. Much has been accomplished during the past 25 years, but still more remains to be done.

ADDENDUM

The absolute prevalence of the different types of heart disease in New England has not been determined. It may be roughly calculated from the U. S. Public Health Service tables of mortality (such as is shown in figure 57 of my book "Heart Disease" [2]), utilizing the relative figures given in this paper. The tables of mortality do not, however, adequately represent the morbidity nor do they reflect the change in diagnostic customs. Under the heading "cardiovascular disease" is included serious arteriosclerosis of the cerebral and renal vessels, which was not so included a generation ago. More research will be needed to determine with accuracy the absolute prevalence of the types of heart disease in New England as well as elsewhere.

264 Beacon St.

2. White, P. D.: Heart Disease, ed. 4, New York, The Macmillan Company, 1951, chap. 12, p. 269.

Functions of Government.—The history of man's struggle for liberty is the history of his struggle to hold down the powers of government. On every occasion citizens must resist expansion of the powers of government. . . . Most people in America have been led to think that the Bill of Rights, the first ten amendments of the Constitution, consists of a list of things that our government is obligated to do for the citizen. Please read them again. You will find that not one of them is a guarantee that our government must do this or that for the citizen. Every last one of them is a guarantee that our government cannot do this or that to the citizen.—W. H. Judd, M.D., Which Way America? *Connecticut State Medical Journal*, February, 1953.

ULCER OF THE GREATER GASTRIC CURVATURE

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and
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Benign gastric ulcer of the greater curvature is deemed by some to be extremely rare. Lahey [1] states that he has never seen this condition. Allen and Welsh,[2] in a review of gastric ulcers removed surgically, report that in their series 100% of the ulcers of the greater curvature were malignant. Boudreau and co-workers,[3] on the other hand, described 234 gastric ulcers discovered at autopsy; 47 were found to be on the greater curvature, and, of these, 24 (51%) were benign. Palmer states that among 100 patients with benign gastric ulcer 9 (9%) had ulcers of the greater curvature.[4] We have been able to establish the diagnosis of benign ulcer of the greater curvature clinically (confirmed at surgery) in four patients from the large gastroenterology services of two hospitals and in two others in a private practice devoted exclusively to gastroenterology. Review of the autopsy material in the Veterans Administration Hospital at Long Beach, Calif., added two additional instances of benign ulcer of the greater curvature unsuspected during life.

A comparison of the incidence of benign and malignant ulcers of the greater curvature was made. In the autopsy records of the Veterans Administration Hospital of Long Beach there were 18 cases of gastric carcinoma. In 10 the lesions were nonulcerative, and in eight the ulcer formation was such that the differential diagnosis between benign and malignant ulcer might have been considered clinically. Only two were located in the greater curvature. In addition, there were 33 patients with gastric carcinoma treated by resection. Nineteen showed chiefly ulcer formation, in four of whom the ulcer was located in the greater curvature. Ninety-one cases of gastric carcinoma were observed in the private practice of one of us (R. S.). In 17 of these, the lesion was on the greater curvature, but there were only two cases of ulcer formation in which the differential diagnosis between benign and malignant ulcer had to be considered. The other 15 were of the infiltrative nonulcerative type. The gastroscopic records of the White Memorial Hospital contained two cases of ulcer of the greater curvature in which the differential diagnosis was uncertain and in which malignancy was later proved; one was a carcinoma, the other a lymphoblastoma.

Thus, 10 cases of malignant ulcer of the greater curvature were observed in the same type of services and during the same period as those in which 8 cases of benign ulcer of the greater curvature, proved by microscopic examination, were found. The ratio of benign to malignant ulcers of the greater curvature was 4:5, slightly lower than that of about 1:1 found by Boudreau and co-workers.[3] It is apparent, however, that ulcer of the greater curvature is a relatively rare disease. The number of cases observed is too small to permit valid statistical conclusions, but it may be said that benign ulcer of the greater curvature occurs with about the same frequency as does malignant ulcer of the greater curvature.

REPORT OF CASES

CASE 1.—A report of a case of benign ulcer of the greater curvature observed at the Veterans Administration Hospital was published by Hussar. Only the significant portions of the gastroscopic protocol, prepared by one of us (R. S.), will be repeated here. "In the posterior wall of the antrum, close to the greater curvature, a round ulcer was seen. It was sharply punched out. It was surrounded by a slightly elevated callous wall, which was irregular. It sloped rather gradually, but was sharply demarcated by the surrounding mucosa. Impression: 1. Callous ulcer of the greater curvature of the antrum; 2. From a merely gastroscopic viewpoint this ulcer looks benign, and I would without any doubt call it benign if it were located on the lesser curvature. I furthermore must admit that the concomitant presence of a duodenal ulcer speaks in favor of the benign nature of the lesion; 3. Nevertheless, it is an accepted opinion that every ulcer of the greater curvature is malignant. Therefore, this ulcer should be considered malignant also, and a large resection should be done." From this report, it appears that at gastroscopic examination the benign nature of an ulcer of the greater curvature may be suspected and so diagnosed.

CASE 2.—J. A., a 34-year-old white man noted in April, 1951, the onset of sharp, nonradiating, midepigastric pain, most noticeable when his stomach was empty. Occasionally, he was awakened from sleep by the pain. The symptoms were controlled by diet and use of alkali. On gastrointestinal roentgenologic examination, a large regular ulcer of the greater curvature about 3 cm. from the pylorus was discovered (fig. 1). The gastroscopic report, prepared by one of us (R. S.), was as follows: "Near the greater curvature of the antrum, a tiny grey ulceration was seen. The antrum was smooth, pliable and soft and peristaltic waves go through the area. Together with the x-ray picture made 6 weeks ago one must draw the conclusion that this is a healing benign ulcer. From the gastroscopic observation there is no reason to think that a malignancy is present." Nevertheless, because of the location of this lesion, it was thought wise to explore this patient. On Sept. 4, 1951, a laparotomy was performed. An almost completely healed gastric ulcer on the greater curvature about 3 cm. from the pyloric ring and a duodenal ulcer were found. A Billroth 1 type of resection was done. Recovery was uneventful, and the patient was discharged Sept. 15, 1951. Gross and microscopic pathological reports confirmed the clinical and operative diagnosis of benign gastric ulcer of the greater curvature of the stomach. The rapid healing of this ulcer and the gastroscopic observations had suggested the benign nature of this ulcer of the greater curvature.

CASE 3.—Mrs. B. O., a 59-year-old Norwegian woman, complained of epigastric pain radiating to the back of five years' duration. Her pain was not related to ingestion of food, never occurred at night, and was accompanied by nausea but never vomiting. In 1946, her physician in Oslo performed a gastrointestinal roentgenographic examination and found that the stomach was normal. He reported anacidity with histamine. The patient's symptoms continued intermittently for five years thereafter. X-ray examination then revealed an ulcer on the greater

From the Veterans Administration Hospital, Long Beach, Calif., and the White Memorial Hospital.

1. Lahey, F. H.: Inflammatory Lesions of the Stomach and Duodenum, J. A. M. A. **127**: 1030-1036 (April 21) 1945.
2. Allen, A. W., and Welsh, C. E.: Gastric Ulcer: The Significance of This Diagnosis and Its Relationship to Cancer, Ann. Surg. **114**: 498-509 (Oct.) 1941.
3. Boudreau, R. P.; Harvey, J. P., and Robbins, S. L.: Anatomic Study of Benign and Malignant Gastric Ulcerations, J. A. M. A. **147**: 374-377 (Sept. 29) 1951.
4. Palmer, E. D.: The Clinical Significance of the Small Benign Gastric Ulcer, with a Note on Benign Ulcer of the Greater Curvature and in the Absence of Free Hydrochloric Acid, Am. J. M. Sc. **223**: 386-391 (April) 1952.

gastric curvature at the junction of the fundus and body. The gastroscopic report, prepared by one of us (R. S.), was as follows: "The whole mucosa of the body proved to be thoroughly atrophic. In the mid-portion of the body a round hemispherical protrusion of the posterior wall was seen over which the gastric mucosa slid during respiration. A little bit higher there was a black pouch surrounded by a non-stiff but rather soft-looking wall. It was difficult to get light into the depth of

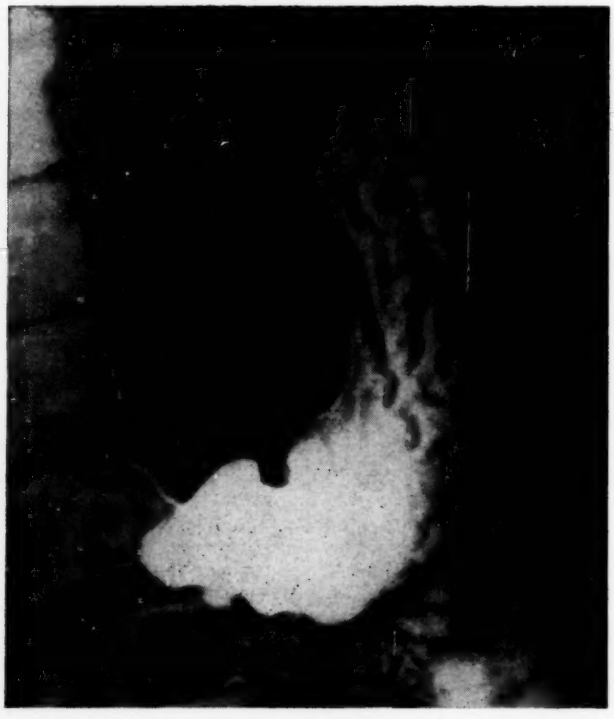

Fig. 1 (case 2).—Ulcer of the greater curvature of the antrum; gastroscopic and microscopic examination revealed its benign nature.

this pouch. There was a definite ulceration present. The upper limit of this ulceration was perfectly sharp. There was no stiff infiltration surrounding this pouch. However, there was a deep valley between the upper portion of the wall and a protrusion coming in from the anterior wall which was persistent, but again did not look very stiff. Impression: large and deep ulcer of the greater curvature surrounded by a soft wall. One tumor-like prominence of the posterior wall, extragastric, most likely infiltrated lymph node. A second tumor-like protrusion of the upper anterior wall. Under consideration of these protrusions and of the location of the ulcer, I must assume, gastroscopically, that this is a malignant ulcer."

The patient was subjected to a subtotal gastrectomy. Her recovery was uneventful. In the excised specimen there was a large ulcer, which on careful microscopic examination proved to be benign (fig. 2). In this case, the benign nature of the ulcer was not suspected clinically. It is interesting that the gastroscopist emphasized the sharp limit of the ulcer and the softness of the ulcer wall. He was obviously misled by the extensive atrophic gastritis (which, however, is known to be compatible with a benign ulcer), by extragastric protrusions (interpreted correctly as enlarged lymph nodes, which, however, were not neoplastic but inflammatory in character), and chiefly by the location of the ulcer.

CASE 4.—This is a case in which the chief diagnostic difficulty was due to the prejudice that an ulcer of the greater curvature must be malignant. A 67-year-old white man was referred for gastroscopic examination because a gastric carcinoma with pulmonary metastases had been diagnosed roentgenographically. The patient had had stomach trouble "all his life," chiefly "gas in stomach." Two years previously he had experienced a gross gastric hemorrhage. His appetite was not good, but there had been no weight loss. The x-ray examination had revealed two ulcer craters of the lesser curvature. A small duodenal ulcer was thought to be present. The chest film showed multiple lesions of the lungs, interpreted as tumor metastases. The gastroscopic protocol, prepared by one of us (R. S.), read in abstract as follows: "The antrum showed a ring-like contraction which was persistent (fig. 3). In the anterior arch of the antrum an elliptic ulcer was seen which was riding saddle-like on the angulus. Its floor was yellowish-grey. Its edges were sharp. There was a swollen ring around it. Separated from it by a bridge of 3 cms. there was an ulcer on the greater curvature, proximal to the ring mentioned. Its edge was rather red and not very well defined. Quite extensive circumscribed swelling was seen from the ulcer edge toward the lower pole of the stomach. This swelling seemed rather stiff. On the lesser curvature, about 4 cms. above the angulus, a huge ulcer crater was seen. Its edge looked sharp. There was a swollen collar around the ulcer, but no distinct stiffness. No connection between the swelling around this ulcer and the lower swelling around the entrance of the angulus could be made out. In the upper posterior wall close to the cardia, extremely prominent soft swelling with node formation was seen. Impression: 1. Three gastric ulcers—one on the lesser curvature, one on the anterior limb of the angulus and one on the greater curvature at the entrance to the antrum. 2. Of these 3 ulcers only the ulcer on the greater curvature suggests malignancy. 3. Severe hypertrophic gastritis of the subcardiac region."

The patient was returned to the referring physician with the following comment: "The patient has 3 ulcers in the stomach. From the purely gastroscopic viewpoint, two of them would be interpreted as being benign. The third one, lying on the greater curvature, would be called malignant gastroscopically, even if it were not located on the greater curvature. It is true that sometimes localized node formation may be inflammatory. However, the concurrence of this swelling with the location of the ulcer at the greater curvature forces one to make the diagnosis of a malignant ulcer. It it curious that there is no visible connection between the upper ulcer and the 2 lower ulcers. If they all would belong to a malignant lesion, one would expect infiltration between these areas, but there was none. It is true, that an ulcer-bearing stomach occasionally may develop a malignancy too, and I have seen it. But this is a very rare event. There are other features which speak in favor of the originally benign nature of the lesions, especially the development of hypertrophic gastritis in the sub-cardiac region. This phenomenon is frequent in gastric and duodenal ulcers. The fact that the patient had had a gross hemorrhage in 1949 supports the gastroscopic impression of the benign nature of at least 2 of the ulcers seen. Whether the metastases of the lung are due to the greater

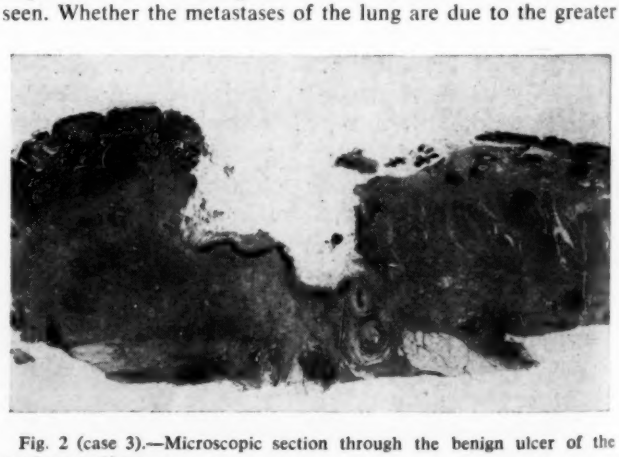

Fig. 2 (case 3).—Microscopic section through the benign ulcer of the greater curvature.

curvature ulcer and whether this is the primary malignancy cannot be said with certainty, but it is possible. Then, we would deal with the extremely rare occurrence of a carcinoma developing in an ulcer-bearing stomach."

The patient died three months later, and an autopsy was performed. The death proved to be due to gross hemorrhage from a gastric ulcer. All three ulcers were found to be present and to be benign. The hemorrhage came from the ulcer of the greater

curvature. There was a carcinoma of the lung, with extensive metastases.

CASE 5.—A 33-year-old white woman complained of weakness, pain below the left costal margin, spells of vomiting, and nervousness of three months' duration. She had had fainting spells owing to gross gastric hemorrhage. At admission she was found to be anemic, and x-ray examination revealed a "meniscus sign" of the lesser curvature. Gastroscopic examination was done on Sept. 14, 1945 by one of us (O. B.), with the following result: "A gastric ulcer was seen on the lesser curvature of the stomach, just beyond the angulus. It was surrounded by a sharp clean-cut margin and had a grayish-white base. Another ulcer was seen on the posterior wall close to the greater curvature. The margin of the ulcer closest to the pylorus was sharp and clean-cut. However, the margin closest to the cardia was raised about 5 mm. and this wall was about 6 mm. in width. There, the ulcer margin was not clean-cut and sharp, and there seemed to be a blending of the floor of the ulcer with the mucosa in this area. Impression: 1. Gastric ulcer on the lesser curvature, apparently benign. 2. Gastric ulcer of the posterior wall near the greater curvature which in all probability is malignant in view of its location and the lack of sharpness of one quadrant of its margin." A subtotal gastrectomy was done on Sept. 25, 1945. The first portion of the duodenum was distorted by a scar. Pathological examination revealed three ulcers of the lesser curvature and a large ulcer of the greater curvature. Multiple microscopic sections revealed the benign nature of all four ulcers.

Fig. 3 (case 4).—Gastroscopic picture of three benign ulcers, showing ring-like contraction of the antrum. A portion of a lesser curvature ulcer is seen at 10 o'clock. A second ulcer rides saddle-like on the angulus. These two ulcers look benign gastroscopically. A third ulcer is seen in the greater curvature (toward 4 o'clock), the lower edge of which is not sharp and suggests malignancy; yet, microscopically this ulcer was benign.

CASE 6.—A 61-year-old white woman complained of "sick spells," consisting of weakness, nausea, some minor abdominal distress, and some loss of appetite for five years. An x-ray examination of the stomach was done on Oct. 5, 1951. A definite niche of the greater curvature was found. The flexibility of the stomach wall was excellent throughout the entire stomach, even at the point of the niche formation. The duodenal cap did not fill well, but no definite lesion could be demonstrated. The roentgenologist diagnosed an ulcer of the greater curvature and recommended further study by gastroscopy. This was done on Oct. 10, 1951, by one of us (O. B.), and resulted in the following impression: "Gastric ulcer on the lower posterior wall very close to the greater curvature of the stomach. The ulcer had the usual appearance of a benign ulcer and would not cause one to think seriously of a malignancy except for the fact that the ulcer is located so close to the greater curvature. . . ." A subtotal gastric resection was done on Oct. 17, 1951, and the pathological examination revealed not only the ulcer of the greater curvature but also a large (1.5 by 1.5 cm.), deep duodenal ulcer, which had not been found at the x-ray examination. Careful microscopic examination of both ulcers failed to show evidence of malignancy.

CASE 7.—J. D., a 54-year-old man was admitted to the hospital for what proved to be bronchogenic carcinoma. Subsequent to pneumonectomy, congestive heart failure developed, and the patient died. Nothing in the clinical history or examination suggested gastrointestinal disease. At autopsy, the stomach was filled with blood and showed a punched out ulcer on the greater curvature, located 1.5 cm. from the pyloric ring. Microscopically it was benign.

CASE 8.—F. C., a 63-year-old white man, was admitted to the hospital for diagnosis of a chronic pulmonary disease, which proved to be bronchogenic carcinoma, from which he died. There were no complaints referable to the gastrointestinal tract. Autopsy revealed a stomach filled with blood clots and tarry stools in the colon. Two centimeters from the pylorus on the greater curvature was an ulceration measuring 2 by 3 cm. The duodenum just beyond the pylorus revealed wrinkling and scarring suggestive of an old healed duodenal ulcer. Microscopic examination of both lesions proved them to be benign peptic ulcers.

SUMMARY AND CONCLUSIONS

Ulcer of the greater gastric curvature is rare. Of 18 ulcers of this type that were seen on two hospital services and in private practice, 10 proved to be malignant (7 carcinomas and 1 lymphoblastoma) and 8 benign, a ratio of 5:4. In a recent autopsy report, an even higher proportion of benign ulcers was found, in an approximate ratio of 1:1. Therefore, the location of an ulcer on the greater curvature should no longer be taken as definite evidence of malignancy. Benign ulcer of the greater curvature is often associated with ulcer of the duodenum or benign ulcer of the lesser curvature of the stomach. Such lesions found together with ulcer of the greater curvature speak in favor of the benign nature of this ulcer. It is a curious and unexplained fact that three of the eight benign ulcers of the greater curvature seen by us were associated with primary pulmonary carcinoma and that, in each of these cases, death of the patient was due to gross hemorrhage from the ulcer of the greater curvature. In addition to other clinical methods, gastroscopic examination is an important adjunct in the differential diagnosis of benign and malignant ulcer of the greater curvature, since the greater curvature is readily accessible to gastroscopic observation.

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Drug Eruptions.—Every physician who prescribes drugs or who treats persons who have taken drugs is repeatedly and inevitably confronted with the problem of recognizing and managing their side-effects, and particularly the eruptions they may produce. These eruptions are not only exceedingly common but are also of almost limitless variety. Clinicians formerly described syphilis and sometimes tuberculosis as the "great imitators." Today this statement can be applied with even greater emphasis to eruptions due to ingested, inhaled or injected medicaments or those absorbed by other routes. . . . The eruptions in which medicaments play a causal or contributory role can take on the appearance typical of almost any dermatologic entity and can, furthermore, produce their own peculiarly characteristic forms as well as the most atypical and puzzling pictures. For this reason the physician who wishes to avoid serious diagnostic errors and their consequences must be on the alert for the possibility of drug causation in almost every case of cutaneous disease.—W. B. Sulzberger, M.D., and J. Wolf, M.D., Dermatology, Essentials of Diagnosis and Treatment, Chicago, *The Year Book Publishers*, 1952.

LOCAL INJECTION OF HYDROCORTISONE AND CORTISONE INTO SKIN LESIONS OF SARCOIDOSIS

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and
Herman Beerman, M.D., Philadelphia

It has been reported [1] recently that the systemic administration of cortisone has a beneficial effect on sarcoidosis. The frequency with which spontaneous remissions occur in this disease makes it difficult to evaluate the effects of any therapeutic agent. Because it has been demonstrated that hydrocortisone and cortisone are effective when injected locally in rheumatoid arthritis [2] and other conditions,[3] it was felt that the cutaneous lesions of sarcoidosis would provide an excellent means of studying the effects of these steroids on this disease. These lesions are readily available for direct observation and biopsy, and small doses of the steroid that is being evaluated can be injected directly into the lesions without producing systemic effects. Adjacent lesions can be left untreated to serve as controls. Experiments designed to demonstrate changes in isolated skin lesions following local injection of the test substances should provide a means of establishing with more certainty the effects of these agents on the disease process. Moreover, by this method of study, it should be possible to determine whether any observed effect of these compounds in sarcoidosis is due to a direct action on the pathological process or to an indirect effect mediated through systemic mechanisms. The purpose of this communication is to report observations on the gross and histological effects of the local infiltration of hydrocortisone (compound F) acetate and cortisone (compound E) acetate [3a] on sarcoid lesions of the skin. Cortisone was also given orally in order to compare the effects of this route of administration with the local administration of hydrocortisone and cortisone.

METHODS

Five patients from the Sarcoid Clinic of the Hospital of the University of Pennsylvania who had multiple skin lesions were selected for this study. The diagnosis of sarcoidosis in these patients had been established by the presence of characteristic histological changes in biopsies of typical skin lesions. In addition, all patients had other manifestations of the disease (table 1). All patients were studied to eliminate the existence of tuberculosis and the deep fungus diseases. The known duration of the cutaneous lesions in three patients was one, two, and seven years. The remaining two patients were unable to date accurately the onset of their skin lesions, but the lesions had been present for at least three months.

Local Administration of Hydrocortisone and Cortisone.—This part of the study was limited to the local infiltration of individual cutaneous lesions consisting of 2 to 5 mm. papules. A sufficient number of lesions to allow for serial biopsies were infiltrated with the following materials: (*a*) 0.05 cc. of suspending agent containing 2.5 mg. of hydrocortisone (50 mg. per cubic centimeter); (*b*) 0.05 cc. of suspending agent containing 2.5 mg. of cortisone (50 mg. per cubic centimeter); and (*c*) 0.05 cc. of the suspending agent (sodium chloride, polysorbate [Tween] 80, carboxymethylcellulose, benzyl alcohol, and distilled water in unknown concentrations). As a control, uninvolved skin of the same patients was injected simultaneously with the same amounts of these three suspensions. Additional sarcoid skin lesions were left untreated in all patients as further controls. Gross observations including estimation of change in size were made on all lesions at frequent intervals, and 3 mm. circular biopsy specimens were removed by the rotary punch technique described by Urbach and Shelley.[4] This technique permits removal of full thickness cylinders of skin without the use of local anesthetic agents. The biopsy specimens were taken before infiltration with the test substance and at approximately one and two week intervals after infiltration. In some cases, additional biopsy specimens were taken at later intervals. Specimens were obtained simultaneously from the untreated lesions and from the uninvolved skin that had been injected with these materials. Forty-seven biopsy specimens were obtained for the study of the local effects of these agents.

Systemic Administration of Cortisone.—After evaluation of the effects of local infiltration, four patients were given oral doses of cortisone in order to compare the local effects of these agents with the systemic effects of cortisone. They received doses of 25 mg. four times daily for six weeks. In all cases, adequate numbers of uninjected skin lesions were available for observation and biopsy. The patients were examined at weekly intervals, and biopsy specimens were obtained at approximately three and six week intervals after starting therapy.

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From the Chest Clinic and the C. Willard Robinson Section of the Department of Medicine and the Department of Dermatology of the Hospital of the University of Pennsylvania (Drs. Sullivan, Mayock, Jones, and Beerman), and the National Cancer Institute of the National Institutes of Health, Public Health Service, Federal Security Agency, Bethesda, Md., and the Department of Medicine, Memorial Cancer Center, New York (Dr. Sullivan). Dr. Jones is a Markle Scholar in Medical Science.

1. Sones, M.; Israel, H. L.; Dratman, M. D., and Frank, J. H.: Effect of Cortisone in Sarcoidosis, New England J. Med. **244**: 209, 1951. Siltzbach, L. E.: Effects of Cortisone in Sarcoidosis: Study of 13 Patients, Am. J. Med. **12**: 139, 1952. Michael, M., Jr.: The Course of Sarcoidosis as Influenced by Cortisone, in Veterans Administration Conference on Cortisone Research, Rahway, N. J., Merck and Co., Inc., 1951, p. 85. Lovelock, F. J., and Stone, D. J.: Cortisone Therapy of Boeck's Sarcoid, J. A. M. A. **147**: 930 (Nov. 3) 1951.

2. Hollander, J. L.; Brown, E. M., Jr.; Jessar, R. A., and Brown, C. Y.: Hydrocortisone and Cortisone Injected into Arthritic Joints: Comparative Effects of and Use of Hydrocortisone as a Local Antiarthritic Agent, J. A. M. A. **147**: 1629 (Dec. 22) 1951.

3. (*a*) Leopold, I. H., and others: Local and Systemic Cortisone in Ocular Disease, Am. J. Ophth. **34**: 361, 1951. (*b*) Goldman, L.; Thompson, R. G., and Trice, E. R.: Cortisone Acetate in Skin Diseases, A. M. A. Arch. Dermat. & Syph. **65**: 177 (Feb.) 1952.

3a. Only the acetate forms of these steroids were used throughout this study. Dr. Elmer Alpert, manager of chemical research, Merck and Co., Inc., supplied the cortisone and hydrocortisone used in this study.

RESULTS

Local Administration of Hydrocortisone and Cortisone.—Results of the local infiltration of these agents are summarized in table 2.

1. Hydrocortisone was injected, in 2.5 mg. doses, into 18 sarcoid skin lesions in five patients. Regression of the lesions injected was apparent 3 to 7 days following infiltration, and the maximal diminution in size of all lesions occurred within 14 days. In all instances, there was a progressive reduction in the size of the treated lesions with complete or nearly complete involution (fig. 1). There was residual hyperpigmentation, depigmentation, or slight erythema of the skin where the lesions had been present. Residual whitish deposits, which persisted for longer than eight weeks, were observed in the infiltrated areas. In no instance was there gross evidence of an inflammatory reaction associated with the infiltration. In three patients, 10 lesions recurred within a period of four to seven weeks after infiltration. The lesions usually failed to revert to the pretreatment size, and remained approximately one-third smaller than before injection. In two patients in whom five individual lesions had been treated, there was no evidence of recurrence 4 to 14 weeks following infiltration, at which time oral administration of cortisone was started.

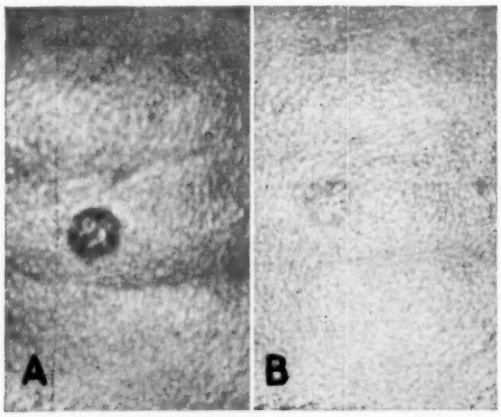

Fig. 1.—The effects of the local infiltration of hydrocortisone in sarcoid lesion of the forehead. *A*, sarcoid papule before infiltration, and *B*, papule 14 days after infiltration with 2.5 mg. of hydrocortisone.

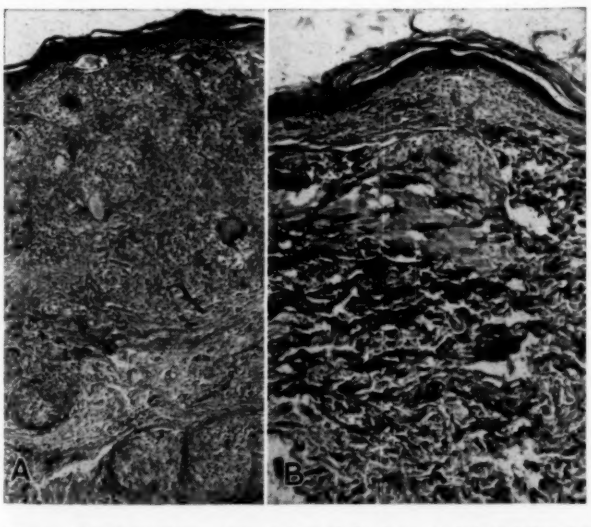

Fig. 2.—Biopsy specimens from lesions of the face. *A*, before infiltration. Note the characteristic noncaseating granulomatous reaction, with many giant cells of the Langhans type (× 49). *B*, seven days following infiltration. A small focus of the granulomatous process is present high in the dermis, beneath which are masses of basophilic material (hydrocortisone acetate). Note the lack of cellular reaction to the presence of the steroid (× 41).

Histologically, the changes observed in the lesions paralleled the gross findings. Biopsy specimens of the lesions of four patients taken seven days after treatment showed typical sarcoid granulomas, and there was no qualitative histological change in the sarcoid reaction. In two patients, biopsies of the area previously occupied by similar lesions, taken 14 days after treatment, revealed only normal skin, and there was no evidence of the sarcoid lesion or of any residuum of the sarcoid lesion.

Fig. 3.—Biopsy specimen of the skin of the forearm seven days after the infiltration of hydrocortisone. Note the masses of basophilic material (hydrocortisone acetate) in the dermis. There is no inflammatory reaction to the presence of the steroid (× 69).

The most striking histological feature of the treated lesions was the presence deep in the corium of masses of a basophilic, granular material, around which there was no cellular reaction (fig. 2). This material was thought to be the same as the residual whitish deposits observed grossly. It was extracted from specimens of uninvolved skin that had been infiltrated one week before removal, and was identified as hydrocortisone acetate. In two patients, lesions that recurred four weeks after treatment were studied histologically and typical sarcoid granulomas were present in both specimens.

4. Urbach, F., and Shelley, W. B.: A Rapid and Simple Method for Obtaining Punch Biopsies Without Anesthesia, J. Invest. Dermat. **17**: 131, 1951.

2. Cortisone was injected into seven sarcoid skin papules in four patients. The lesions diminished in size progressively after treatment, but the response was considerably less striking than that observed with hydrocortisone. There was a reduction of about one-half in the size of the lesions in these patients. A persistent whitish-red area was present in the site of injection of cortisone for longer than eight weeks after injection. Complete recurrence to the pretreatment size occurred in two patients within two to four weeks after injection. In one patient, the duration of response could not be evaluated because oral administration of cortisone was started three weeks following local treatment. The only lesion treated in the remaining patient was entirely removed for histological study seven days after treatment.

throughout the period of study, and sarcoidosis was found in 10 biopsy specimens obtained at frequent intervals.

5. Hydrocortisone, cortisone, and the suspending agent were injected intradermally in the uninvolved skin of the forearm in three patients. A whitish deposit was present at the sites of injection of the steroids, and in addition the area injected with cortisone had a reddish appearance. There was no change in the sites injected with the suspending agent. Biopsy specimens from the areas injected with hydrocortisone and cortisone were removed after seven days, and masses of basophilic, granular material were present in the dermis (fig. 3). This material was not present in biopsy specimens from the areas injected with the suspending agent. Tissue was

TABLE 1.—*Summary of Clinical Data of Patients with Sarcoidosis*

Case No.	Age and Sex	Method of Histological Diagnosis	Duration of Disease	Sites of Disease	Duration of Skin Lesions	Areas of Skin Involvement
1	19, F	Node biopsy Skin biopsy	11 yr.	Lymph nodes, lungs, cardiac, and skin	1 yr.	Neck, chin, and angles of mouth
2	31, M	Vocal cord biopsy Skin biopsy	2 yr.	Lymph nodes, lungs, bone, vocal cords, and skin	2 yr.	Neck, angles of mouth, eyelids, and fingers
3	32, M	Node biopsy Skin biopsy	2 yr.	Lymph nodes, lungs, and skin	?	Forehead and preauricular area
4	32, F	Tonsil biopsy Skin biopsy	4 yr.	Lymph nodes, lungs, tonsils, and skin	?	Lateral nose, back, and extremities
5	19, M	Node biopsy Vocal cord biopsy Skin biopsy	7 yr.	Lymph nodes, liver, spleen, bone, vocal cords, palate, and skin	7 yr.	Lateral nose, malar areas, bridge of nose, angles of mouth, neck, and arms

TABLE 2.—*Effects of Single, Local Infiltrations of Hydrocortisone and Cortisone on Sarcoidosis of the Skin*

Agent Injected	Milligrams Injected	No. of Patients	No. of Lesions Injected	Gross Results: Maximal Regression	Gross Results: Time of Maximum Regression	Gross Results: Duration of Response	Histological Findings: Time of Biopsy	Histological Findings: No. of Biopsies	Histological Findings: Sarcoid	Histological Findings: Normal Skin	Remarks
Hydrocortisone acetate	2.50	5	18	Complete or nearly complete	7-14 days	28-35 days (3 patients)	7 days 14 days	5 2	4 0	1 2	In 2 patients there was no relapse in 4 and 14 weeks when oral administration of cortisone was started
Hydrocortisone acetate	1.25	2	2	About one-half	7 days	28 days	7 days 28 days	1 1	1 1	0 0	.....
Cortisone acetate	2.50	4	7	About one-half	7 days	14-28 days (2 patients)	7 days	5	4	1*	In 1 patient there was no relapse in 3 weeks when oral administration of cortisone was started. In the 4th patient the entire lesion was removed for biopsy
Cortisone acetate	1.25	3	5	None to one-third	7 days	14-28 days	7 days 14 days	2 1	2 1	0 0	.....
Suspending agent	0.05 cc.	4	4	None	.....	.....	7 days	2	2	..	No change was noted during a 3 month period of observation

* In this instance, it was believed that the biopsy punch missed the lesion.

Biopsy specimens obtained seven days after infiltration showed the presence of typical lesions of sarcoid in all patients. Masses of basophilic material without adjacent cellular reaction were also present in these sections. This material was subsequently identified as cortisone acetate.

3. Single lesions in four patients were infiltrated with the suspending agent and were observed for three months. There was no change in appearance of the lesions during this period. In two patients, biopsy specimens from these lesions were removed seven days after infiltration. The histological picture was similar to the pretreatment specimens and to the control lesions. No basophilic material was noted, and no inflammatory reaction was seen.

4. Multiple sarcoid papules adjacent to the treated lesions were available for observation in each patient. No gross changes were observed in the control lesions

analyzed by chemical and chromatographic methods.[4a] By careful dissection, a hard, white pellet was separated from the skin specimens. One milligram of this pellet was taken for analysis. The sample was ground in quartz sand, washed, and extracted with chloroform for one hour at pH 1 on a mechanical shaker. After being washed with 0.1 N sodium hydroxide and water, the chloroform solution was evaporated *in vacuo*. Aliquots were analyzed by a modification of the Porter-Silber colorimetric test [5] and by a modification of the paper chromatography method of Burton and co-workers.[6] In addition to mixed chromatograms, the identity of hydrocortisone was further tested by fluorescence in

4a. Analyses were performed by Dr. E. M. Richardson and Dr. F. C. Dohan, Endocrine Section of the Pepper Laboratory of the Hospital of the University of Pennsylvania.

5. Devised by Dr. E. M. Richardson.

sulfuric acid. The results of this analysis were as follows: (*a*) hydrocortisone acetate skin specimen: hydrocortisone acetate (approximately 318 μg per milligram of tissue); (*b*) cortisone acetate skin specimen: cortisone acetate (approximately 78 μg per milligram of tissue); (*c*) suspending agent skin specimen: no steroid isolated; and (*d*) uninjected skin specimen: no steroid isolated.

6. Additional experiments to determine the effects of less concentrated suspensions of hydrocortisone and cortisone were performed as follows: sarcoid skin lesions were infiltrated with 0.05 cc. (1.25 mg.) of hydrocortisone (25 mg. per cubic centimeter), in suspension, and 0.05 cc. (1.25 mg.) of cortisone (25 mg. per cubic centimeter), in suspension. The suspending agent was the same as that used in the previous experiments. Two lesions injected with hydrocortisone decreased to about one-half their previous size within one week after infiltration. The lesions then recurred and reached their original size four weeks later. Five lesions injected with cortisone showed slight change (one-third regression or less) in one week's time and recurred completely within two to four weeks. Sarcoid was present in all biopsy specimens taken from this group of patients.

TABLE 3.—*Effects of Six Week Course of Oral Administration of 100 Milligrams of Cortisone per Day on Sarcoid Skin Lesions*

Case No.	Gross Results: Maximal Regression	Gross Results: Time of Maximal Regression	Gross Results: Duration of Response After Therapy	Histological Findings: Days of Oral Therapy	Histological Findings: Result	Remarks
1	Nearly complete	4-6 weeks	2-3 weeks	21 42 42	Sarcoid Sarcoid Sarcoid	.....
2	Two-thirds to complete	4 weeks	1-3 weeks	21 28 42	Sarcoid Sarcoid Sarcoid	Rebound relapse, characterized by the appearance of numerous skin lesions in sites previously not involved
3	Nearly complete	4-6 weeks	3 weeks	28 42	Sarcoid Sarcoid	Rebound relapse as described above
4	Nearly complete	4 weeks	3 weeks	..*	.....*	Rebound relapse as described above

* Post-treatment biopsy specimens were not obtained in this patient.

Oral Administration of Cortisone.—When the studies of local injection were completed, four of these patients were treated with cortisone in oral doses of 25 mg. four times daily for six weeks. Results of this study are summarized in table 3. A progressive decrease in size of the previously untreated skin lesions occurred in all patients. Improvement was apparent one to two weeks after the start of therapy, and maximal improvement occurred within four to six weeks. This improvement consisted of a maximal regression that was two-thirds to complete in all skin lesions. One to three weeks after the cessation of therapy, there was evidence of regrowth of the skin lesions in all patients. At the time of relapse, in addition to regrowth of the previous lesions, three of the four patients had numerous new skin lesions in sites that had not heretofore been involved by the disease process. It was noted that the lesions that had been infiltrated with hydrocortisone and that had not relapsed prior to treatment with oral administration of cortisone were the only lesions that did not relapse after systemic therapy was completed. Biopsy specimens of cutaneous lesions were taken during and at the completion of systemic therapy, and typical sarcoid granulomas were present in every specimen. The new lesions, which appeared in previously uninvolved areas following cessation of oral therapy, were biopsied in three patients and revealed sarcoidosis.

COMMENT

In the past, a variety of agents have been reported to be of therapeutic benefit in sarcoidosis, but after extended clinical study they were found to have no effect on the disease process. We believe that this study of the effects of local infiltration provides convincing evidence that hydrocortisone and cortisone have a definite effect on the lesions of sarcoidosis. Although the number of patients in this study is small, a considerable number of individual lesions were injected. Unequivocal regression occurred in every treated lesion, but no change was observed in the control lesions. The fact that the local injection of these agents into a lesion caused regression of the lesion injected, while control lesions were unaffected, indicates that hydrocortisone and cortisone exert their effect directly on the pathological process.

In the material available for histological study, there were no qualitative changes in the sarcoid granulomas that could be attributed to the steroids injected. When the granulomatous reaction was present after treatment, it was not different from the lesions in the control specimens; when the lesions regressed completely, there was no residuum in the area infiltrated. Others [1] have described progressive hyalinization and fibrosis of the sarcoid granulomas in patients treated with systemic cortisone. These changes were not observed in skin lesions after local or systemic therapy in this study.

After local infiltration, hydrocortisone produced more complete regression in sarcoid skin lesions than did cortisone, and the improvement persisted longer in the lesions treated with hydrocortisone. Similar differences in the local effects of these two compounds have been observed by Hollander and co-workers [2] in rheumatoid arthritis and by Goldman,[7] using the mosquito bite reaction in a sensitive patient.

There was no gross evidence of an immediate or delayed inflammatory reaction due to the intradermal injection of these steroids, and microscopic specimens obtained at 7, 14, and 28 days after infiltration showed no evidence of a cellular reaction. These findings are contrary to those of Goldman and co-workers [3b] who stated, " . . . a significant number of extensive inflam-

6. Burton, R. B.; Zaffaroni, A., and Keutmann, E. H.: Paper Chromatography of Steroids, Corticosteroids and Related Compounds, J. Biol. Chem. **188**: 763, 1951.

7. Goldman, L.: Local Effect of Compound F on Reactions to Mosquito Bites, J. A. M. A. **149**: 265 (May 17) 1952.

matory reactions in tissue were observed grossly, and even more frequently in the microscopic sections . . . ," after intradermal injection of cortisone.

The oral administration of 100 mg. of cortisone daily for six weeks produced unequivocal regression of skin lesions in the four patients so treated. The degree of improvement was comparable to that produced in isolated lesions by single, local injections of 2.5 mg. of hydrocortisone. Improvement seemed to occur more slowly with orally administered cortisone, and the lesions recurred more promptly when it was stopped. The response of skin lesions to local or oral steroid therapy was not related to the known duration of the lesions, i. e., lesions of long-standing responded equally as well as those that had been present for a short time.

The development of new lesions in previously uninvolved skin areas in three of four patients following oral therapy suggests that there was spread of the disease process at the time of relapse. This phenomenon, which has been called "rebound relapse," has not been noted by previous authors [1] reporting on the beneficial effects of systemic cortisone therapy in sarcoidosis; however, it has been described in patients with rheumatoid arthritis [8] following cortisone therapy.

SUMMARY AND CONCLUSIONS

The gross and histological effects of the local infiltration of hydrocortisone and cortisone on the skin lesions of sarcoidosis have been studied in five patients. The local infiltration of hydrocortisone produced complete or nearly complete regression of all lesions injected. Partial relapse of most of the lesions occurred four to seven weeks after maximal response. The local infiltration of cortisone produced less complete regression, and relapse occurred somewhat earlier. These agents, when injected locally, apparently produce their effects by a direct action on the pathological process of sarcoidosis. No qualitative histological alterations attributable to the steroids were observed in the granulomatous reaction of sarcoidosis in skin lesions. Gross and microscopic observations suggested that the steroids persisted locally after intradermal injection. This was confirmed by chemical and chromatographic analysis.

After the evaluation of local injection, cortisone was given orally for six weeks to four patients. Cortisone given orally caused regression of cutaneous lesions that was comparable to that produced by the local injection of hydrocortisone; however, the onset of improvement was more gradual and recurrence was more prompt with systemic therapy. Spread of the disease process ("rebound relapse") occurred in three of four patients after oral treatment with cortisone was stopped. The results of this study suggest that, in selected cases, the local administration of hydrocortisone may be useful in controlling the skin lesions of sarcoidosis.

444 E. 68th St., New York (Dr. Sullivan).

8. Hench, P. S.; Slocumb, C. H.; Polley, H. F., and Kendall, E. C.: Effect of Cortisone and Pituitary Adrenocorticotropic Hormone (ACTH) on Rheumatic Diseases, J. A. M. A. **144**: 1327 (Dec. 16) 1950.

WHIPPLE'S DISEASE (INTESTINAL LIPODYSTROPHY) AND SERUM GLYCOPROTEINS

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and
Uffe Sagild, M.D., Boston

The first case of Whipple's disease (intestinal lipodystrophy) in which were found both a marked elevation of the serum glycoprotein and deposits of glycoprotein in the characteristic "foamy" macrophages is reported. This association may represent a fundamental pathogenetic relationship. We also wish to emphasize certain diagnostic and therapeutic features of Whipple's disease.

Whipple [1] in 1907 described a disease characterized clinically by vague abdominal distress, steatorrhea, progressive loss of weight and strength, and arthralgia. His patient was a 36-year-old physician, who died following abdominal exploration. The clinical diagnosis had been tuberculous mesenteric lymphadenitis. Histologically the lamina propria of the small intestine and the mesenteric lymph nodes showed a striking accumulation of "foamy" mononuclear cells and deposits of fat and fatty acids. The foamy macrophages were found predominantly in the lamina propria and to a lesser degree in the lymph nodes, where the lesion was basically a lipogranuloma. Whipple noted that these foamy mononuclear cells did not contain fat, an important observation that had been largely neglected till recently. Though Whipple suggested the possibility of a spirochetal infection, he thought this was "some obscure disease of fat metabolism" and suggested the term intestinal lipodystrophy.

In recent years increasingly frequent case reports of Whipple's disease have appeared in the literature, bringing forth a nosographic pattern that is of practical diagnostic value to the clinician. Almost all of the patients are middle-aged men who complain of vague gastrointestinal disturbances, with progressive loss of weight and strength and usually diarrhea, arthralgia, and a chronic cough. Frequently they have a brown pigmentation of the skin and hypotension suggesting Addison's disease (adrenal cortical hypofunction). The course of the disease is occasionally febrile and may be accompanied by generalized lymphadenopathy, suggesting infection. Death usually occurs one to five years after the onset of symptoms. Almost invariably laboratory examinations disclose steatorrhea, secondary anemia, and hypoproteinemia. A normal or flat dextrose tolerance

From the Joslin Clinic, the New England Deaconess Hospital.

1. Whipple, G. H.: A Hitherto Undescribed Disease Characterized Anatomically by Deposits of Fat and Fatty Acids in the Intestinal and Mesenteric Lymphatic Tissues, Bull. Johns Hopkins Hosp. **18**: 382, 1907.

curve, achlorhydria, and hypocalcemia are frequently found, and occasionally persistent leukocytosis or eosinophilia is noted. Results of adrenocortical function tests are usually normal. X-ray studies of the small intestine frequently reveal a so-called deficiency pattern.

Little has been added to the original pathological description of Whipple. In addition to the characteristic findings in the small intestine and mesenteric lymph nodes, frequently a fibrous panserositis is seen. Whipple's early observation that the phagocytosed substance in the foamy cells was nonsudanophilic was extended by Black-Schaffer,[2] who demonstrated its glycoprotein characteristics. Recently Upton [3] confirmed this observation. The cause of the disease is still completely obscure, and no effective treatment is known. The reviews by Plummer and co-workers,[4] Hendrix and co-workers,[5] and Russo [6] are excellent.

Russo found 38 cases in the literature and reported one more. Two additional cases have been reported from the Massachusetts General Hospital [7] and by Upton.[3] The case presented here is apparently the 42nd reported case of Whipple's disease and the 4th or 5th that was diagnosed clinically before any pathological verification. Certain unusual features will be discussed later.

REPORT OF A CASE

A 64-year-old white salesman was admitted to the New England Deaconess Hospital Feb. 14, 1952, with the chief complaints of fatigue and weight loss. His family history revealed that a sister had diabetes mellitus and that two brothers and a daughter had died from cancer. As a young man he had had a specific urethritis. No history of arthralgia or swelling of the joints was elicited. He had for many years been a moderate drinker, but stated that he had not used alcohol for three or four years prior to admission. He was a moderate tobacco smoker.

In December, 1949, he first noted bilateral inguinal hernias, which were repaired in January, 1950. One year later recurrence of the hernia on the right side necessitated repair again. In April, 1951, a small femoral hernia developed on the right side, and on June 11, 1951, he entered the Deaconess Hospital for the first time for repair of this. At this time he stated that he had lost 25 lb. (11.3 kg.) during the preceding 18 months despite a good appetite. He had no abdominal pain, bloody stools, or diarrhea; in fact, he had been chronically constipated. He had a chronic cough but no arthralgia. His temperature was 98.6 F, pulse rate 82, respiration rate 18, and blood pressure 130/80 mm. Hg. He appeared undernourished. His height was 5 ft. 4 in. (163 cm.) and his weight 113 lb. (51.3 kg.). The physical examination revealed no other abnormalities except for a small femoral hernia on the right side, which was surgically repaired. His postoperative course was uneventful.

At this time x-ray studies of the chest, upper gastrointestinal tract, and colon were reported as revealing no abnormalities. The hemoglobin level was 14.0 gm. per 100 cc., and the red blood cell count was 5,360,000. Three white blood cell counts were consistently high, varying between 20,900 and 25,250, with a normal differential count. Bone marrow aspiration showed mild myeloid hyperplasia of a nonspecific type with increase in the myeloid: erythroid ratio to 6: 1, but was otherwise essentially normal. Results of urinalysis were normal, and the feces contained occult blood on two occasions. The fasting blood sugar level was 119 mg. per 100 cc., the nonprotein nitrogen level 25 mg., and the cholesterol level 174 mg. The serum Hinton test was negative, and the total serum protein content was 6.2 gm. per 100 cc. In view of an elevated sedimentation rate and a basal metabolism of +25%, it was thought that the leukocytosis could be explained on the basis of some hidden focus of infection.

Eight months later, on Feb. 14, 1952, the patient entered the New England Deaconess Hospital for his second and final admission. He complained of extreme fatigue and weight loss. He had lost approximately 35 lb. (15.9 kg.) during the preceding two years. For two months he had had a sense of fullness in the abdomen after meals and sometimes a rather slight gripping pain in the epigastrium. He had no anorexia, but was afraid to eat because of the postprandial symptoms. Glossitis was not noted. About four weeks prior to admission, his bowels, previously constipated, became loose; the stools were grayish-yellow and occasionally "looked like fat." No blood was noted. Fresh fruit or fruit juices seemed to bloat him, and he noted that bowel movements relieved the abdominal discomfort. Three to four months prior to admission he noted polyuria and nocturia, and his private physician found the blood sugar elevated as high as 235 mg. per 100 cc. Carbohydrate intake was restricted, but he refused to take insulin. The chronic nonproductive cough had persisted, but he complained of no joint pains.

On physical examination he was found to be an alert, emaciated, sick-looking man with rather dark skin without local areas of increased pigmentation. His weight was 105 lb. (47.2 kg.). The blood pressure was 105/80 mm. Hg, temperature 98.6 F, pulse rate 90, and respiration rate 20. His tongue was normal, and the heart and lungs were normal except for a few scattered rales in both lung bases. The abdomen seemed somewhat distended and doughy in consistency. The liver was not felt. Rectal examination was negative except for a very tight anal sphincter and a small, firm prostate. There was moderate atrophy of the right testis. Slight ankle edema was present. Except for absent chest hair, the hair distribution was normal. Several small inguinal nodes were palpable, nontender, and discrete.

Laboratory Data.—Most of the laboratory data are summarized in table 1. Radioactive iodine uptake was 27% 24 hours after 50 μc had been given by mouth. The urinary excretion was 50.5% in the first 12 hours and 21.3% in the following 12 hours.

An oral tolerance test with 100 gm. of glucose gave the following results: fasting blood sugar level 100 mg.; at 30 minutes 136 mg.; at 60 minutes 174 mg.; at 120 minutes 258 mg.; and at 180 minutes 178 mg. per 100 cc. In the three hour specimen he excreted 2.4% sugar but none in the other specimens. An intravenous tolerance test after infusion of 25 gm. of glucose in 30 minutes was as follows: fasting 78 mg.; 30 minutes 188 mg.; 60 minutes 152 mg.; 90 minutes 125 mg.; and 120 minutes 110 mg. per 100 cc.

The fasting vitamin A concentration was 5.3 units per cubic centimeter and five hours after 9.5 cc. of percomorph liver oil (oleum percomorphum) was given orally, the vitamin A level was 7.1 units per cubic centimeter. This signifies almost no absorption. The level of carotenoids was very low, 0.88 units per cubic centimeter.

The fasting glycine level was 0.27 mg. per 100 cc., and two hours after 40 gm. of gelatin was given orally, the glycine concentration was 0.64 mg. per 100 cc., representing a normal response. Results of duodenal aspiration studies were normal, including the concentration of the pancreatic enzymes as determined by several methods.

An electrocardiogram showed low voltage, ventricular premature beats, depressed ST segments in leads 2 and 3, low T_1 waves, and right axis deviation. Roentgenograms of the chest revealed no abnormalities. Gastrointestinal films showed hypermotility and a very coarse pattern in all segments of the small bowel, suggesting edema due to hypoproteinemia (fig. 1). A smooth filling defect of the greater curvature suggested an intramural prepyloric tumor or aberrant pancreatic tissue. In addi-

2. Black-Schaffer, B.: Tinctoral Demonstration of Glycoprotein in Whipple's Disease, Proc. Soc. Exper. Biol. & Med. **72**: 225, 1949

3. Upton, A. C.: Histochemical Investigation of the Mesenchymal Lesions in Whipple's Disease, Am. J. Clin. Path. **22**: 755, 1952.

4. Plummer, K., and others: Lipophagic Intestinal Granulomatosis (Whipple's Disease): Clinical and Pathologic Study of 34 Cases, with Special Reference to Clinical Diagnosis and Pathogenesis, Arch. Int. Med. **86**: 280, 1950.

5. Hendrix, J. P., and others: Whipple's Intestinal Lipodystrophy: Report of 4 Cases and Discussion of Possible Pathogenic Factors, Arch. Int. Med. **85**: 91, 1950.

6. Russo, F. R.: Whipple's Disease: Review of the Literature and Report of Two Cases, A. M. A. Arch. Int. Med. **89**: 600, 1952.

7. Case Records of the Massachusetts General Hospital (Case 38101), New England J. Med. **246**: 375, 1952.

tion, a somewhat shortened esophagus with herniation of the stomach was found.

Peritoneoscopy performed by Dr. Clifford Franseen on Feb. 21, 1952, disclosed a normal liver, and no abnormalities of the surfaces of the large or small bowel were noted. No free fluid was found. Needle liver biopsy performed by direct visualization showed normal liver cells containing glycogen without fatty infiltration. No abnormalities were seen on an iron stained specimen. A lymph node biopsy from the groin showed hyperplastic lymphoid tissue. Sections stained with the McManus technique contained no glycoprotein.

At the time of admission and subsequently the patient passed yellowish-gray, foul-smelling stools that on microscopic examination showed occasional fat crystals and globules and on one

TABLE 1.—*Representative Laboratory Findings, Last Admission*

Hemoglobin, gm./100 cc.	9.5
Red blood cells, millions/cu. mm.	3.39
White blood cells, thousands/cu. mm.	11.7
Differential white cell count	Normal
Platelet count	Normal
Prothrombin concentration, % of normal	66
Sedimentation rate (Wintrobe)	Normal
Routine urinalysis	Normal
Fasting blood sugar, mg./100 cc.	100
Blood urea nitrogen, mg./100 cc.	14
Serum protein, gm./100 cc.	3.6
Serum albumin	2.1
Serum globulin	1.5
Albumin-globulin ratio	1.4
Serum calcium, mg./100 cc.	7.8
Serum phosphorus, mg./100 cc.	2.9
Serum cholesterol, mg./100 cc.	78
Serum bilirubin, mg./100 cc.	0.3
Thymol turbidity test	Normal
Thymol flocculation test	Normal
Sulfobromophthalein retention	Normal
Alkaline phosphatase, Bodansky units	2.1
Hinton test	Negative
Basal metabolic rate	+ 29%
Radioactive iodine uptake	Normal
Urinary radioactive iodine excretion	Normal
Oral glucose tolerance curve	Decreased
Intravenous glucose tolerance curve	Decreased
24 hour urinary nitrogen loss, gm./24 hours	1.68-6.58
24 hour fecal nitrogen loss, gm./24 hours	1.59-7.5
Percentage fecal fat in 72 hour dried specimen	56-60
Weight of wet stools, gm./24 hours	690
Vitamin A tolerance test	No absorption
Gastric aspiration, free HCl	Present
Duodenal aspiration, pH	Normal
Duodenal aspiration, viscosity	Normal
Duodenal aspiration, tumor cells	Negative
Duodenal aspiration, amylase	Normal
Duodenal aspiration, trypsin	Normal
Duodenal aspiration, lipase	Normal
Duodenal aspiration, phosphatase	Normal
Glycin tolerance test	Normal
Corticotropin test, 4 hours, intramuscular	Borderline
Corticotropin test, 8 hours, intravenous	Normal
Urinary 17-ketosteroid excretion, mg./24 hours	15.4

occasion rare meat fibers. The presence of steatorrhea was conclusively established on three occasions by the finding of 56, 58, and 60% fat, respectively, in dried 72 hour stool collections. The simultaneous determinations of fecal nitrogen loss in 24 hours were 1.59, 7.5, and 3.51 gm. respectively. The increase in fecal nitrogen from 1.59 to 7.5 gm. occurred immediately after three daily intravenous infusions of human albumin. Also, in the interval between the last two fat determinations the patient had received cortisone therapy for 12 days. In addition to the laboratory data presented in table 1, of special interest was the glycoprotein pattern in the serum, which is summarized in table 2.

Course in Hospital.—For almost five weeks the patient received daily intramuscular injections of crude liver extract, vitamin B complex, and vitamin B_{12}, and lipotropic substances and vitamin C were given orally. For a three week period he received testosterone in daily doses of 25 mg. intramuscularly. His low caloric intake was supplemented by 1,000 to 2,000 cc. of protein hydrolysate solutions with 10 to 15% glucose solution intravenously every day for a six week period. Vitamin K and potassium were added intermittently to the infusions. In addition, he received several units of human albumin and two blood transfusions. On two occasions intravenous fat emulsions were administered, but these were poorly tolerated. Folic acid, a total of 720 mg., was administered orally and parenterally during a 16 day period.

From his 35th hospital day and during the following four weeks until his death, he received cortisone intramuscularly in doses ranging from 50 to 400 mg. daily, so that altogether he

TABLE 2.—*The Glycoprotein Pattern of the Serum*

	Patient's Values	Normal Values
Total protein-bound polysaccharide, mg./100 mg. of protein	5.25	2.50 ± 0.44 *
Total serum protein, gm./100 cc. of serum	3.8	7.87 ± 0.29
Serum glycoprotein, mg./100 cc. of serum †	260	92.2 ± 21.4

* Standard deviation.
† Determined by the Winzler precipitation technique.

received 3,137.5 mg. No treatment, however, seemed to influence the slow but steady downhill course of the patient's condition. When cortisone was given, no euphoria or increased appetite was noted, and the fat content in the dried stools remained unaltered. The diarrhea continued, and during the last two

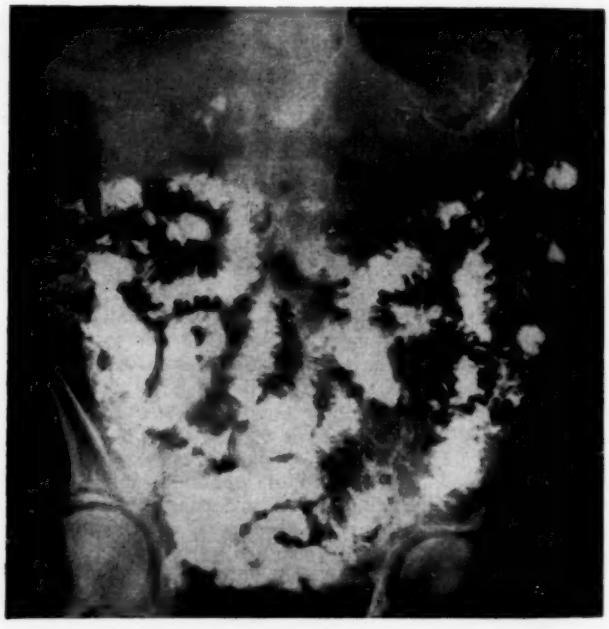

Fig. 1.—Gastrointestinal roentgenogram showing the coarse mucosal pattern of the small intestine.

weeks of his life, it became very severe. He was afebrile during his entire hospital course. Gradually he became more confused and drowsy, musical rales developed in both lungs, and he died on the 64th hospital day.

Necropsy.—At necropsy, which was performed 12 hours post mortem, the significant abnormalities were primarily in the gastrointestinal tract. There was extreme emaciation. The body measured 153 cm. in length and weighed 32 kg. No effusions or pleuritis, pericarditis, or peritonitis was found. The gastric mucosa was normal, but within the wall of the pylorus was a well-circumscribed, pale yellow, soft tumor mass 2.5 by 1.5 by 1.7 cm. Microscopically this was a lipoma. The mucosa and wall of the small intestine were edematous and brawny, with a thickness of 0.4 cm. in the most severely affected area. The mucosal pattern showed fissuring, with prominent white villous folds. A homogeneous, white, greasy paste-like material could be expressed from the cut mucosal surface. Focal brown-red

areas of discoloration were scattered throughout the jejunum and ileum. The cecal wall was edematous; otherwise the large bowel was normal. Numerous enlarged mesenteric lymph nodes were found. Their greatest diameters varied from 0.2 to 0.5 cm., and cut surfaces showed a honeycombed pale gray tissue with a slight brown discoloration.

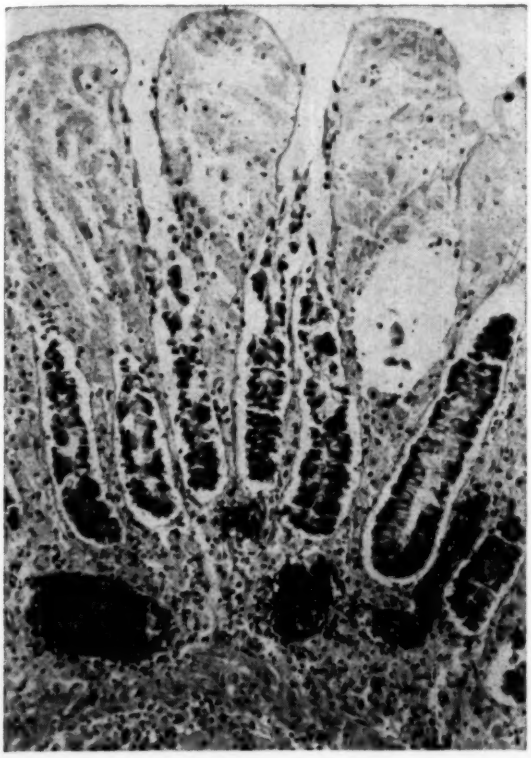

Fig. 2.—Section of the small intestine showing the thickening and clubbing of the villi, which are infiltrated with large, pale foamy cells (hematoxylin and eosin).

With hematoxylin and eosin stained slides, microscopically there was thickening and clubbing of the mucosal villi of the small intestine (fig. 2). This was due to the diffuse but dense infiltration of large pale-staining cells with a granular or foamy cytoplasm. Their nuclei were small and either rounded or horseshoe in shape. A few similar cells were seen scattered in the submucosa. The mucosal glands were normal in appearance, and there was no evidence of a neoplastic type of invasion. In focal areas within the submucosa there were dense collections of polymorphonuclears and lymphocytes with a small amount of fibrin. The muscular and serosal coats were normal.

Mesenteric lymph nodes (fig. 3) showed absent germinal follicles and replacement of the usual lymphoid tissue with similar large foamy cells. Surrounding large spaces were several multinucleated giant cells of the foreign body type.

Special stains done on frozen sections of the small intestine and mesenteric nodes showed a large amount of sudanophilic fat in large globules or aggregates of small globules. In the small intestine the majority of the fat stained with sudan was in the lamina propria and smaller amounts in the submucosa. In the lymph nodes there was less neutral fat, and it was mainly in sinusoids. The foamy cells, wherever they were observed, failed to take the sudan stain for neutral fat. With the McManus stain (periodic acid Schiff reagent) for glycogen, mucoproteins or glycoproteins, the tissues showed a large number of red-violet granules within the large phagocytic cells in the intestine (fig. 4) and lymph nodes.

Sections of the liver, spleen, and lung showed no infiltration, with abnormal amounts of neutral fat or phagocytic cells like those described. Synovia of joints were not examined. The architecture of the adrenals, testes, thyroid, pancreas, and pituitary was normal. The pancreatic islets showed no morphological abnormalities. The kidney showed moderate arteriosclerosis. No intercapillary lesions (Kimmelstiel-Wilson) were observed. No evidence of vacuolated nuclei due to glycogen infiltration was found in the liver cells or kidney tubules.

COMMENT

Diagnosis.—The clinical picture of cachexia, vague bowel complaints, steatorrhea, and hypoproteinemia obviously presents certain diagnostic difficulties. It is useful to place the causes of steatorrhea in three primary categories: hepatobiliary, pancreatic, and intestinal. Hepatobiliary steatorrhea was considered unlikely in this case in view of the normal results of liver function tests, the normal liver biopsy specimen, and the absence of jaundice. Pancreatogenous steatorrhea was ruled out on the basis of normal findings on duodenal aspiration studies, the relative absence of meat fibers or significant nitrogen in the stools, and the lack of x-ray evidence for pancreatic disease. The diabetic type of glucose tolerance curve was the only finding that might have implicated the pancreas. The cause of steatorrhea arising from defects of the intestinal tract is not so easily discovered. Such conditions as regional ileitis, ulcerative colitis, and enterocolic fistulas were satisfactorily ruled out by the x-ray studies. Primary sprue and idiopathic steatorrhea seemed unlikely because of the absence of glossitis and macrocytic anemia and the failure to respond favorably to standard sprue therapy. Whipple's disease resembles more closely so-called symptomatic sprue, whereby such conditions as tuberculosis, sarcoid, and lymphomas cause obstruction of the lacteals, mesenteric lymph nodes, or thoracic duct. Usually there is a total absorptive defect rather than just steatorrhea. In addition, in most cases there is evidence of the underlying disease available to make the diagnosis.

Fig. 3.—A mesenteric lymph node showing foamy cells, multinucleated giant cells, and vacuolations (hematoxylin and eosin).

Ordinarily hypoproteinemia can be explained by (1) an inadequate protein intake; (2) failure to manufacture serum protein by the liver; or (3) excessive loss from the body by proteinuria or creatorrhea. Although chronic, mild creatorrhea may have played some role in the causation of hypoproteinemia in this patient, more important was the poor fat absorption and the fact that therefore the patient relied heavily on protein catabolism as a source of calories to meet his metabolic needs. Another striking laboratory finding was the extremely low value of the serum cholesterol (78 mg. per 100 cc.). In Upton's case,[3] the serum cholesterol was 42 mg. per 100 cc.

Pathogenesis.—Because the pathogenesis of this disease is completely obscure, this case has provided rich

Fig. 4.—Section of the small intestine showing the deeply stained granules within the foamy cells (McManus stain).

opportunities for speculation. A thorough review of different pathogenetic mechanisms postulated in the literature can be found in the article by Plummer and associates.[4] That Whipple's disease is not simply the result of blockage of the lacteals or mesenteric lymphatics was shown by Black-Schaffer,[2] who demonstrated the presence of a glycoprotein in the macrophages in the intestinal mucosa and mesenteric lymph nodes by using the Schiff periodic staining technique. This finding was confirmed in our case.

We investigated the glycoprotein pattern in the patient's serum, using the Winzler precipitation technique. The data in table 2 show a very marked increase in the protein-bound polysaccharides of the serum protein and a high glycoprotein fraction of the serum. The increase of the serum glycoprotein, however, does not account for the marked increase in the total protein-bound polysaccharides, so that there must be an absolute increase in the polysaccharides bound to protein. Although obviously no conclusions can be drawn from findings in a solitary case, the simultaneous disturbance of intra- and extracellular glycoproteins may have a significance hitherto unsuspected. Diabetics tend to have abnormally high levels of serum glycoproteins, but the values do not approach the levels reached in this patient.

Glycosuria and the diabetic-type glucose tolerance curve, in response to glucose given both orally and intravenously, are unusual in Whipple's disease. As far as we know, with one exception,[4] whenever this test was done in other cases, it showed a flat or normal curve. One can only speculate whether or not this represented true diabetes mellitus or a type of "starvation diabetes." The family history of diabetes would lend some support to the former diagnosis.

Treatment.—As far as we know, there is no known effective treatment for Whipple's disease. The failure of this patient to respond favorably to cortisone is of particular interest and merits some emphasis. Hendrix and co-workers [5] and Plummer and co-workers [4] have suggested that adrenal cortical insufficiency may be etiologically related to Whipple's disease. Hendrix and his associates gave one of their patients adrenal cortical extract daily without noticeable improvement. A woman studied at the Massachusetts General Hospital [7] received corticotropin (ACTH) for 11 days and then cortisone for approximately a week. Her clinical condition definitely improved, and, in addition, the fecal fat content became normal. Glynn and Rosenheim[8] treated their patient with adrenal cortical extract for about a month and noted that "on this treatment he showed considerable improvement and he looked and felt better. However, the diarrhea once more recurred. . ." Schutz, Benner, and Christian [9] noted no improvement when their patient received 5 mg. of desoxycorticosterone acetate daily for three weeks. In their case, however, the foamy cells in the submucosa were sudanophilic, and one wonders if this was truly Whipple's disease. Bergner and associates [10] treated four patients with Addison's disease with compound A (11-dehydrocorticosterone) and noted a significant fall in fecal fat excretion. One patient had significant steatorrhea, and with this treatment the fecal fat excretion fell 75%. These same authors gave compound A to nine rats whose adrenals had been removed and noted a decrease of 50% in total fecal fat excretion. Bavetta and associates [11] noted a 38% decrease in fat absorption following adrenalectomy in rats. However, Barnes and associates,[12] working with rats whose adrenals had been removed, concluded that the adrenal glands were "not specifically necessary for (1) the normal rate of fat absorption; or (2) the normal rate of incorporation of absorbed fatty acids into the intestinal mucosal phospholipids and neutral fat."

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9. Schutz, P. J.; Benner, W. H., and Christian, W. A.: Intestinal Lipodystrophy (Whipple's Disease), Am. J. Med. **7**: 553, 1949.

10. Bergner, G. E., and others: The Effect of 11-Dehydrocorticosterone on Fecal Fat Excretion, abstracted, J. Clin. Endocrinol. **8**: 606, 1948.

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In our patient the fecal fat content remained abnormally high (60%) in spite of cortisone therapy, and he denied any subjective improvement after 30 days of treatment. Therefore, it may be that cortisone is not the adrenal steroid fraction that would be helpful in Whipple's disease, and it would be interesting to see the effect of prolonged treatment with compound A or corticotropin.

SUMMARY

A case of Whipple's disease that was diagnosed ante mortem is presented. Apparently this is the 42nd case to be described in the literature. The markedly elevated glycoproteins of the serum, hitherto undescribed, may have some pathogenic relationship to the glycoprotein-laden macrophages that characterize Whipple's disease histologically. The patient had a diabetic glucose tolerance curve, which is unusual in Whipple's disease. Although cortisone had no apparent beneficial effect in this patient, possibly prolonged treatment with corticotropin (ACTH) or compound A (11-dehydrocorticosteroid) would be worthy of trial in future patients with Whipple's disease.

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CLINICAL NOTES

ACUTE POISONING FROM USE OF ISOPROPYL ALCOHOL IN TEPID SPONGING

Roy F. Garrison, M.D., Kansas City, Mo.

It has long been recognized that methyl and isopropyl alcohol can be toxic if taken internally in small amounts. Aikman [1] states that individual susceptibility is marked, and serious symptoms, such as coma and blindness, may occur after the ingestion of 10 cc. of methyl alcohol. The danger in inhalation or absorption of toxic amounts through the skin, however, has not been emphasized. Rubbing alcohol is commonly used in hospitals for tepid sponging of febrile children, but little note has been made of the possible dangers inherent in the practice. This report illustrates the very real danger of such procedures.

REPORT OF A CASE

A 22-month-old white boy was admitted to the pediatric ward of St. Joseph Hospital, Kansas City, Mo., at 3:00 p. m. on Nov. 15, 1952. He had a rectal temperature of 104.6 F, but the only other unusual physical symptom was an inflamed pharynx. The diagnosis on admission was acute respiratory disease or possibly influenza. Antibiotic therapy and sponging with tepid alcohol were begun.

The boy was reexamined at 7:30 p. m., and a startling change in his condition was observed. The odor of alcohol filled the small cubicle where he lay, and the bed linens were drenched with alcohol. The child was limp and comatose and did not react to needle pricks. Breathing was deep and slow, and the heart rate was fast but regular. His pupils were constricted and did not respond to light. The deep reflexes were difficult to elicit, and the corneal reflex was absent. Blood was drawn from the arm, and later analysis for alcohol content showed a level of 128 mg. per 100 cc. It had a brighter color than is usual in venous blood and resembled arterial blood. Tests for abnormal hemoglobin formation were not done because spectroscopic equipment was not available. The nurse estimated that about 1¼ pt. (625 cc.) of isopropyl alcohol had been used in the sponging procedure.

The child responded slowly, over a period of several hours, to caffeine injections, oxygen, and fluid administration. Retching, vomiting, and chewing of the tongue occurred. The following morning he could walk but was very ataxic. At the end of 24 hours, he had apparently completely recovered. The nonprotein nitrogen content of the blood and the results of urinalysis were normal.

COMMENT

Tepid sponging for the purpose of reducing fever in febrile children has long been an accepted procedure, but the methods commonly used are poor. At many large hospitals nurses are instructed to saturate a towel with a solution of equal parts of water and alcohol, drape it over the patient, and then cover him with a dry sheet or blanket. This procedure actually impedes heat radiation and increases the possibility of absorption of alcohol by the skin. The sponging should be carried out in the following manner. Cool or cold water only should be used for saturating the towel. It should be placed over the patient with no other covering. Every few minutes the towel, which has been warmed by the body, should be resaturated with cool water and the procedure repeated. By this method high temperatures usually may be reduced in an hour. On one occasion we used chipped ice on the towel and turned a fan directly on a child with a temperature of 109 F.

Isopropyl alcohol taken internally, absorbed through the skin, or inhaled may produce depression, narcosis, coma, and death in that sequence. The toxicity of the alcohols, insofar as their depressant effect on the central nervous system is concerned, increases with the length of their carbon chain. In this case, therefore, the amount of isopropyl alcohol in the blood would be much more of a depressant than the same amount of ethyl alcohol.

The inhalation factor was probably more important than absorption through the skin as Macht's [2] experiments on rats, dogs, and rabbits showed little absorption after massive applications of alcohol. This reaction, of course, cannot be compared exactly to that of human skin. Heffter [3] states that, internally, isopropyl alcohol is partially oxidized to acetone, partially excreted unchanged, and partially excreted as acetone. The oxidation rate is much slower than that of ethyl alcohol. Macht [2] also found, in experiments on cats, that the narcotic action of isopropyl alcohol was twice as potent as that of ethyl alcohol. Donley [4] reported a case of toxic encephalitis, rhinitis, bronchitis, and anemia in a patient who inhaled the vapor of a solvent consisting of 74% isopropyl alcohol and a small amount of dimethylphthalate and the monomethyl ether of ethylene glycol (Methyl Cellosolve).

From the Department of Pediatrics, St. Joseph Hospital.

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4. Donley, D. E.: Toxic Encephalopathy and Volatile Solvents in Industry: Report of Case, J. Indust. Hyg. & Toxicol. **18**: 571, 1936.

5. Von Oettingen, W. F.: The Aliphatic Alcohols: Their Toxicity and Potential Dangers in Relation to Their Chemical Constitution and Their Fate in Metabolism, Bulletin 281, Federal Security Agency, United States Public Health Service, 1943, p. 116; Poisoning, New York, P. B. Hoeber, 1952, p. 371.

Von Oettingen [5] has also described the toxicity of isopropyl alcohol.

SUMMARY

A case of acute poisoning produced by tepid sponging with isopropyl alcohol is presented. Intoxication undoubtedly was a result of inhalation and the large quantity of alcohol used in the small, unventilated cubicle. Sponging with cool or cold water is a more desirable method for reducing temperature than sponging with alcohol, because of this danger.

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ESOPHAGEAL OBSTRUCTION DUE TO SERUTAN

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and
A. Marck, M.D., Milwaukee

Recent medical literature contains few reports [1] of esophageal obstruction resulting from ingestion of hygroscopic substances. These hygroscopic substances become swollen and spongy on the addition of water. If an insufficient quantity of water or fluid is taken after ingestion of the hygroscopic material and/or if transient spasm or constriction in the esophagus occurs, the rapidly swelling mass may become trapped. We encountered a patient with a subtotal gastric resection in whom Serutan caused an esophageal obstruction. The manufacturer of Serutan states that it is a hydrogel obtained from Plantago ovata

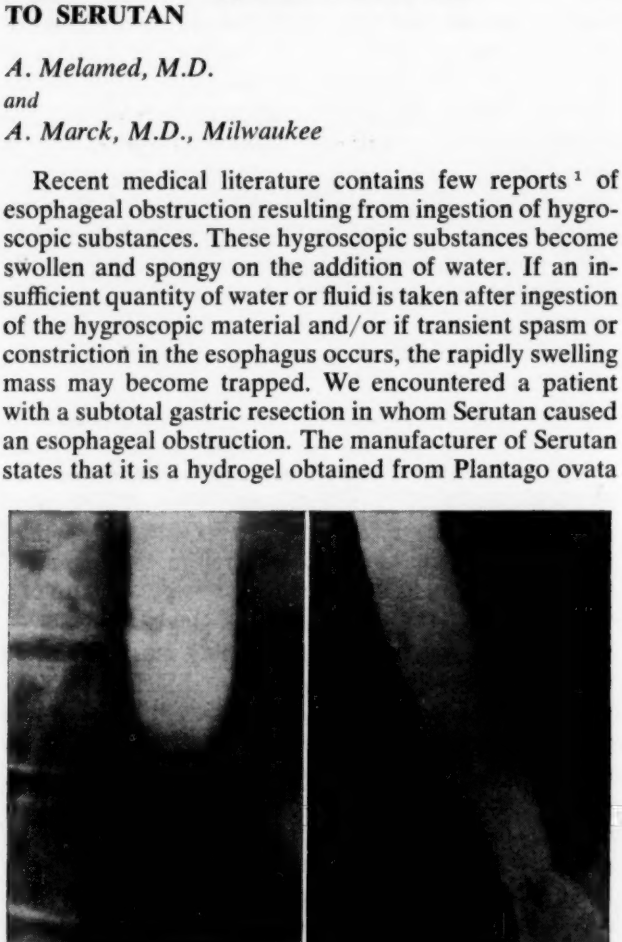

Fig. 1.—Obstruction in the lower esophagus. *A*, the lower border of the obstruction is convex. *B*, a few minutes later, an intraluminal defect is discernible.

and extracted from sugar beets from which the roughage has been removed.

REPORT OF A CASE

This 69-year-old patient entered the hospital on May 13, 1949, 12 to 13 hours after he had ingested Serutan. Without reading the directions first, he ingested two teaspoonfuls of dry Serutan and then had taken a "swallow of water." Almost immediately the patient experienced a feeling of fulness in the lower chest. The material "got stuck." More water, milk, and coffee was swallowed in rapid succession in unknown quantities and resulted in even greater distress. When the patient entered the hospital, he was very uncomfortable and could not retain fluid or solids.

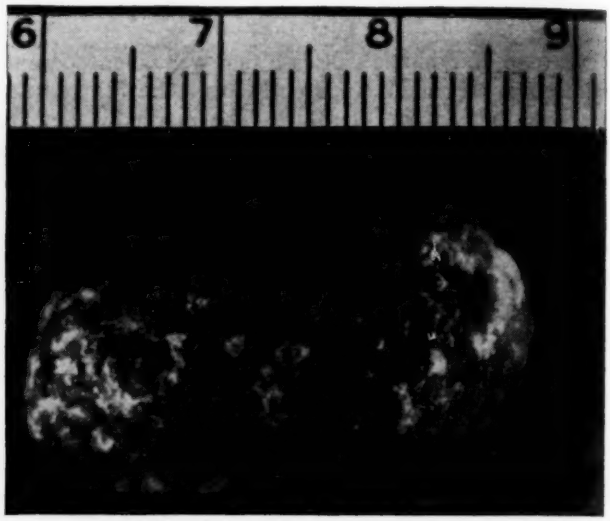

Fig. 2.—Mass of rubbery consistency measures approximately 17 by 29 mm.

In 1939, an appendectomy was performed, and, four days later, bleeding from the gastrointestinal tract necessitated a second emergency operation. The bleeding point in the duodenum was ligated, but subtotal gastrectomy was performed in 1945 after recurrent episodes of hematemesis and melena. Food intake after the subtotal gastrectomy was limited. Ingestion of relatively small quantities of food resulted in a feeling of fulness in the upper adbominal region but did not cause nausea or vomiting.

Physical examination showed a fairly well-preserved, elderly man under the influence of a narcotic. The blood pressure was 110/86 mm. Hg, temperature 98 F, pulse 60 per minute, and respirations 20 per minute. The pupils were contracted but responded to light. The tongue was coated and dry. The heart and lungs were essentially normal. Two right subcostal and one right rectus scars were well healed. Urinalysis and blood count determinations disclosed no significant abnormalities.

Shortly after his admission to the hospital, an esophagram of the patient showed complete obstruction in the lower esophagus about 2 in. (5.08 cm.) above the diaphragm. Slight dilatation of the esophagus proximal to the obstruction was also noted. Initially, the lower border of the opaque column was convex (fig. 1*A*), but, a few minutes later, an intraluminal defect was discernible (fig. 1*B*). No gas or air was visible in the stomach. None of the opaque material entered the stomach during the period of roentgenologic examination.

Morphine sulfate, 1/6 grain (10 mg.), and atropine sulfate, 1/100 grain (0.6 mg.), were given one and five hours after the patient was admitted. Two and one-half and six hours after admission, 1,000 cc. of 5% glucose in isotonic sodium chloride solution was administered. After a second dose of mineral oil (liquid petrolatum), emesis of an ovoid foreign body occurred (fig. 2). This mass measured approximately 17 by 29 mm., was of rubbery consistency, and was partially coated with barium sulfate. Complete relief was obtained after emesis of the foreign body.

Study of the upper gastrointestinal tract on May 16, 1949, showed no abnormality in the esophagus or in the stomach. The gastrectomy stoma was patent. On occasions, the patient still ingests Serutan during bouts of constipation, but he follows the directions more closely. He has experienced no similar episodes of obstruction.

From the Department of Radiology, Evangelical Deaconess Hospital.

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COMMENT

Complications following the ingestion of hygroscopic substances are rare. A word of warning and caution should be given patients ingesting such agents, particularly patients in whom passage of the hygroscopic agent might be delayed in the esophagus or stomach. If copious quantities of fluid are not taken, the danger of the material becoming trapped in the esophagus or stomach with reduced capacity is increased. Patients who have had subtotal gastric resection might well be advised to be extremely cautious or even, perhaps, to refrain from ingesting hygroscopic substances.

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ACUTE RENAL INSUFFICIENCY FOLLOWING TRAUMA TO THE ABDOMINAL WALL

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Acute renal insufficiency without nephritis has been more readily recognized in recent years. Although described by Minami [1] after World War I, it was not clearly understood until World War II, when a number of British investigators [2] drew attention to what they thought was a distinctive lesion observed in the kidneys of air raid casualties who came to autopsy after being buried under debris for several hours. They found that the glomeruli were almost completely intact and that the predominant lesion was confined to the lower nephrons. The lower nephrons showed focal degeneration and necrosis of the tubules, with heme casts in the lumens of these tubules. More recently, however, Oliver [3] and co-workers have clearly shown not that the lesion is restricted to any specific local area such as the lower nephrons, but that this destructive process may be irregular and may involve the proximal as well as the distal tubules in a random fashion. Clinically, its counterpart is recognized in the sudden development of oliguria or anuria, with proteinuria and a progressively mounting azotemia and hypertension.

At first, this characteristic syndrome of acute renal failure was thought to be specific in injuries resulting from the crushing of muscles and the resulting liberation of a pigment, myohemoglobin. After intensive study, however, it became clear that many other circumstances can produce it. Similar or identical lesions have also been observed in nontraumatic muscular ischemia, burns, heat stroke, blackwater fever, toxemias of pregnancy and uteroplacental damage, alkalosis, sulfonamide intoxication, poisoning with certain vegetable and chemical agents, and following transfusions with incompatible blood.[4]

There are numerous references to this condition in military personnel engaged in active battle.[5] Combat warfare resulting in extensive wounds offers a fertile field for development of acute renal failure. In civilian life, it is rarely encountered and, then, only as a result of very serious injuries, i. e., multiple fractures resulting from automobile accidents or falls, accidental damage to a major blood vessel, and injuries suffered by miners trapped in caves for many hours after an explosion. Since, under conditions of peace, there has been no record of the development of acute renal insufficiency following localized trauma, we report the following case history.

REPORT OF A CASE

A 34-year-old Negro man sustained an injury while at work on May 12, 1951. A bale of wool cloth weighing 250 lb. (123.4 kg.) fell from a shelf and struck his abdomen. He was thrown to the floor dazed but, after an undetermined period, regained consciousness and experienced a sharp pain in the upper abdomen. He attempted to continue with his work but was unable to do so because there was a marked increase in the intensity of the abdominal pain. Several hours later, he was seen by one of us (S. J. S.). At that time, a complete physical examination failed to reveal any evidence of external injury, although slight tenderness and rigidity in the upper right quadrant of the abdomen were definitely present. The patient was told to go home, to remain in bed over the weekend, and to return for a check-up two days later. He followed these instructions. When he returned, he stated that on May 13, 1951, he vomited twice and that the abdominal pain had now become more widespread. In addition, he complained of loss of appetite, nausea, weakness, and diminished urinary output. He denied having taken any drugs or alcoholic beverages or having used any cleaning fluid. Because of the history and severe abdominal pain, he was admitted to the hospital on May 14, 1951.

On admission, physical examination disclosed a well-developed and well-nourished adult Negro man who was somewhat lethargic but in no acute distress. The pupils were equal and regular and reacted normally to light and accommodation. The fundi did not reveal any hemorrhages, exudates, or papilledema. The external ocular movements were normal, and there was no nystagmus. The neck was supple, and the thyroid was not palpable. The chest was symmetric and the expansion equal. The cardiac dulness was not enlarged to percussion, and no murmurs or friction rub were audible. The rhythm was regular and the blood pressure 130/80 mm. Hg. The lungs were clear to percussion and auscultation. There was generalized abdominal tenderness but no rigidity or spasticity. There were no signs of erythema, pallor, contusions, edema, or ecchymosis of the abdominal wall. The liver and spleen could not be felt. On rectal examination, no masses could be felt and the prostate was normal in size and consistency. The extremities showed no evidence of inflammation or edema, the reflexes were normal, and no abnormal toe signs could be elicited. A surgical consultation was requested, and it was the opinion of the examiner that no immediate surgical intervention was indicated.

Urinalysis on May 14, 1951, revealed a specific gravity of 1.018, 2+ albumin, and no sugar. On microscopic examination, the urine was found to contain many white blood cells, 2 to 3 erythrocytes, and occasional hyaline and granular casts. A blood cell count taken on the same day disclosed 13 gm. of hemoglobin; 4,680,000 erythrocytes, and 12,000 white blood cells per 100 cc. The differential count was within normal limits. On May 15, 1951, a blood chemistry analysis revealed

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2. Bywaters, E. G. L., and Beall, D.: Crush Injuries with Impairment of Renal Function, Brit. M. J. **1**: 427, 1941. Bywaters, E. G. L.: War Medicine Series: Crushing Injury, ibid. **2**: 643, 1942. Bywaters, E. G. L.; Crooke, A. C., and Morris, C. J. O. R.: Limb Compression in the Tube Shelter Disaster, with Note on Plasma Volume Determinations, Lancet **2**: 373, 1943. Bywaters, E. G. L., and Dible, H. J.: The Renal Lesion in Traumatic Anuria, J. Path. & Bact. **54**: 111, 1942.

3. Oliver, J.; MacDowell, M., and Tracy, A.: The Pathogenesis of Acute Renal Failure Associated with Traumatic and Toxic Injury, Renal Ischemia, Nephrotoxic Damage and the Ischemuric Episode, J. Clin. Investigation **30**: 1307, 1951.

4. Lucke, B.: Lower Nephron Nephrosis (Renal Lesions of Crush Syndrome, of Burns, Transfusions, and Other Conditions Affecting Lower Segments of Nephrons), Mil. Surgeon **99**: 371, 1946.

5. Mallory, T. B.: Hemoglobinuric Nephrosis in Traumatic Shock, Am. J. Clin. Path. **17**: 427, 1947. Lucke.[4]

urea 52.3 mg., creatinine 7 mg., sugar 114 mg., total protein 6.8 mg., calcium 8.2 mg., phosphorus 5.8 mg., and chlorides 350 mg. per 100 cc. The carbon-dioxide combining power was 30.2 vol. %. Taken on the same day, a roentgenogram of the abdomen in the erect position and a cystogram failed to reveal free air under the diaphragm or extravasation of the dye into the abdominal cavity; therefore, the possibility of a rupture of either the urinary bladder or other viscus was ruled out.

The urinary output on the second hospital day was only 60 cc., and this volume continued to diminish to the point of almost complete anuria by the fourth day. Vomiting and headache were first noted on May 16, 1951, and, at that time, a Levin tube was inserted, intermittent nasogastric suction applied, and infusions begun. The patient was treated conservatively and was given 10% glucose in saline and Ringer's solution. The quantity given was regulated by the amount of vomitus and stomach contents withdrawn plus an allowance for the slight amount lost by perspiration and breathing. The patient's total daily intake of fluids was between 1,200 and 1,800 cc., and, in addition, he was fed soft foods of high carbohydrate content.

Except for persistent occipital headaches and general weakness, the patient complained very little, despite the diminished urinary output, mounting azotemia, and rising blood pressure, which reached a level of 220/120 mm. Hg on the fifth hospital day. On the sixth day, the urinary output had increased to 100 cc. and, on the seventh, to 150 cc. The urea content continued to rise and reached a maximum level of 200 mg. per 100 cc. on May 19, 1951. At the same time, the chloride content and carbon-dioxide combining power remained low. The sodium and potassium levels could not be obtained, since a flame photometer was not available.

On May 21, 1951, at 12:45 a.m., a severe convulsion developed, and the patient died suddenly. Several hours later an autopsy was performed and the report stated that gross examination of the kidneys disclosed marked congestion and distention; both organs together weighed 490 gm. The cortex was thick and was a light, grayish-yellow brown color. The pyramids were also pale and of a similar hue, and, near their union with the cortex, there were a few injected vessels. The pelves of the kidneys were normal. The bladder was intact, with moderate contraction, and contained an ounce of straw-colored urine. The lining membrane was edematous and showed submucosal edema and hemorrhage, particularly around the trigone. The liver weighed 1,720 gm. and appeared congested. There were many congested foci in the area around the central vein. The lungs showed moderate anthracosis and slight congestion. The brain weighed 1,300 gm. and revealed a minimal amount of pial edema. There were no hemorrhages, and the interior of the brain appeared normal.

On microscopic examination, the outstanding pathological changes were limited to the kidneys and liver. The predominant renal lesion involved the tubules and consisted of edema, degeneration, and necrosis. The tubules of the cortex as well as the Bowman's capsules were filled with albuminous fluid, and their epithelium was low. Several of these tubules contained a reddish hemoglobin derivative. There was round cell infiltration around some of the engorged pelvic veins. The liver showed areas of necrosis around the central vein and numerous capillaries, leukocytes, round cells, and some spherical macrophages with brown pigment in the cytoplasm. There were only a few atrophic liver cells.

COMMENT

Acute renal failure following severe trauma is called traumatic anuria; when it develops soon after a crushing injury and is associated with obvious signs of muscle damage, it is labeled crush syndrome; when it is associated with the sequelae of mismatched transfusions, it receives the name of hemoglobinuric nephrosis; and, when it appears as a result of a temporary deprivation of oxygen in the kidney, regardless of the cause, it is known as the renal anoxia syndrome. All of these, as well as the term lower nephron nephrosis coined by Lucke,[4] are synonymous and represent the same clinicopathological state.

The patient described in the case report gave a definite account of receiving an injury to the abdomen, as a result of which he was dazed and unconscious for an unknown period. Within 24 hours he noted vomiting, anorexia, and diminished urinary output. On the third day, azotemia, hypertension, and oliguria, with clinical signs of uremia, developed. Such a course of events, in addition to the fact that there was no history of previous nephritis, led to the diagnosis of acute renal insufficiency resulting from trauma. This diagnosis was confirmed by the necropsy findings of a nephropathic lesion involving the tubules and the presence of heme casts within these tubules.

The lack of external signs of injury and the absence of any intraperitoneal hemorrhage or laceration of an organ do not vitiate the diagnosis. There is a clear-cut history of a blow to the abdomen followed by unconsciousness and pain and tenderness in the upper right quadrant. The severity of a force capable of producing a cloudy sensorium in a previously healthy, robust, young adult cannot be underestimated, despite its failure to produce overt signs of penetration. The fact that this patient was dazed for an undetermined period immediately after the accident implies that traumatic shock did occur. In shock there are several mechanisms that contribute to the genesis of renal failure; the most important is a compromise of the renal circulation because of renal ischemia or anoxia, with ultimate anuria.

The pathological demonstration of central vein necrosis of the liver in this patient is not without precedent. Bywaters[6] and Darmady[7] have described similar changes in their reports of crush syndrome and traumatic anuria. Although central vein necrosis is commoner in carbon tetrachloride poisoning, it is not necessary to consider the possibility of exposure to an hepatotoxic agent either by ingestion or inhalation as a causative factor in the renal failure noted here. In the first place, the patient's history completely negates it, and, in the second place, Ellenberg and Osserman[8] have recently shown that shock per se, depending on its duration and not on its cause, can produce central vein necrosis.

SUMMARY AND CONCLUSIONS

It appears reasonable to conclude that acute renal insufficiency, in the case reported, developed as a result of an injury to the abdominal wall. Although the blow in itself produced no external signs of trauma, it did create some degree of shock that in turn was capable of causing renal ischemia and subsequent renal failure. This clinical syndrome should be borne in mind as a hazard that may follow trauma sustained in peacetime jobs.

60 Gramercy Park (10) (Dr. Gelfand).

6. Bywaters, E. G. L.: Anatomical Changes in the Liver After Trauma, Clin. Sc. **6**: 19, 1948.

7. Darmady, E. M.: Traumatic Uremia: Collective Review, J. Bone & Joint Surg. **30B**: 309, 1948.

8. Ellenberg, M., and Osserman, K. E.: The Role of Shock in the Production of Central Liver Cell Necrosis, Am. J. Med. **11**: 170, 1951.

DETECTION OF OCCLUSION OF THE INTERNAL CAROTID ARTERY BY PHARYNGEAL PALPATION

Henry S. Dunning, M.D., New York

Recent reports by Johnson and Walker, Fisher, and Walsh and Smith,[1] on occlusion of the internal carotid artery with its disastrous effects on the brain and eye offer explanations for a variety of cerebral and visual symptoms. Since the introduction of carotid arteriography by Moniz in 1927, the frequent occurrence of this lesion has been recognized, and its clinical diagnosis has been made possible. Before the use of arteriography, final diagnosis of occlusion of the internal carotid artery rested with the pathologist. I believe that the lesion can be detected by palpation alone.

The usual site of bifurcation of the common carotid artery into the external and internal carotid arteries is at the level of the hyothyroid interspace. Between this level and the angle of the mandible these two arteries lie close together, with the external carotid slightly anterolateral to the internal. At the level of the angle of the mandible the internal carotid courses medially, lying behind the lateral wall of the pharynx and the pharyngopalatine muscle. Within the cranial cavity the internal carotid divides into the ophthalmic, posterior communicating, anterior cerebral, chorioid, and middle cerebral arteries. Arterial pulsation can be felt externally from the clavicle to the angle of the mandible. Pulsation below the hyothyroid interspace is caused exclusively by the common carotid, but pulsation above it cannot be differentiated because of the juxtaposition of the external carotid and the internal carotid. In the pharynx, however, the only pulsation that can be felt is that of the deeper lying internal carotid. This pulsation is easily palpated in persons who are able to inhibit the gag reflex. Many persons, with encouragement by the physician, are able to inhibit the reflex.

The following technique is recommended for palpation of the internal carotid artery in the pharynx. The patient is placed in the supine position and requested to breathe through the mouth. The examining physician, wearing a rubber glove moistened with water to minimize the friction that initiates the gag reflex, gently palpates the posterior wall of the pharynx with the forefinger and very slowly draws the finger laterally as far as the pharyngopalatine muscle. When this muscle is relaxed, distinct pulsation of the artery can be felt more readily, while the thumb of the other hand is pressing externally in the carotid fossa. If, after repeated trials, no pulsation is detected, it would seem safe to assume that the lumen of the artery is very narrow or nonexistent. Palpation on both sides of the pharynx should always be carried out. Clonic contractions of the pharyngopalatine muscle may simulate the pulse. These contractions may be differentiated from pulsation of the internal carotid by timing them with the usually visible common carotid pulsation in the neck. If repeated gagging occurs, the procedure should be terminated, because contraction of the pharyngopalatine muscle pushes the examining finger medially and covers the artery. The palpation must be light and gentle, as too much pressure causes gagging. In my experience it has not been necessary to block the gag reflex by injecting cocaine into the pharynx.

Since March 5, 1952, I have diagnosed three cases of occlusion of the internal carotid arteries by this method. Occlusion was believed to be the cause of the various symptoms mentioned in the following case reports.

REPORT OF CASES

CASE 1.—A 63-year-old man had experienced attacks of almost complete blindness of the left eye and one episode of expressive aphasia with clumsiness of the right hand. There was slight constriction of the left visual field. Pharyngeal palpation revealed no pulsation of the left internal carotid artery and normal pulsation of the right. A systolic bruit was heard over the right eye on one of two auscultations. On surgical exposure of the carotid arteries on the left at the site of bifurcation of the common carotid into the external and internal carotids there was definite arteriosclerosis. The internal carotid was about one third of its normal diameter and was pulsating feebly.

CASE 2.—A 71-year-old man had attacks of complete blindness of the right eye and intermittent dull pain in the same eye. He had experienced one episode of clumsiness and numbness of the left hand. Slight lower left facial weakness was present. There was minor disturbance of motility in the left arm. Pharyngeal palpation revealed no pulsation of the right internal carotid artery and normal pulsation of the left. A systolic bruit was heard over the left eye on each of two auscultations. On surgical exposure of the carotid arteries on the right at the site of bifurcation of the common carotid into the external and internal, there was so much calcification in the common and internal carotids that it was not considered safe to compress them. Pulsation was seen in the external carotid but not in the internal.

CASE 3.—A 66-year-old man had episodes of confusion with staggering gait and careless behavior including intermittent urinary incontinence, inattentiveness, disorientation as to place and time, impairment of memory, and inability to perform simple calculations. Intracranial calcification of an internal carotid artery was visible in roentgenograms of the skull. Pharyngeal palpation repeated on several occasions revealed no pulsation of either internal carotid artery.

In case 1 and 2 a bruit was heard over the eye on the side of the pulsating internal carotid artery. This sound may have been caused by the greater amount of blood being carried by the artery in compensation for occlusion of the opposite internal carotid. This sound may be a sign of the lesion.

CONCLUSIONS

Pharyngeal palpation may be employed for detection of occlusion of the internal carotid artery, the cause of a variety of cerebral and visual disorders. The method is much less complicated than carotid arteriography, a highly technical procedure and one that is sometimes hazardous in elderly persons with arteriosclerosis, the patients in whom this lesion most commonly occurs.

525 East 68th St.

Surgical procedures were performed by Dr. Bronson S. Ray.

From the New York Hospital and the Department of Medicine (Neurology), Cornell University Medical College.

1. Johnson, H. C., and Walker, A. E.: The Angiographic Diagnosis of Spontaneous Thrombosis of the Internal and Common Carotid Arteries, J. Neurosurg. **8**: 631 (Nov.) 1951. Fisher, M.: Transient Monocular Blindness Associated with Hemiplegia, A. M. A. Arch. Ophth. **47**: 167 (Feb.) 1952. Walsh, F. B., and Smith, G. W.: The Ocular Complications of Carotid Angiography: The Ocular Signs of Thrombosis of the Internal Carotid Artery, J. Neurosurg. **9**: 517 (Sept.) 1952.

LOSS OF TASTE AS TOXIC EFFECT OF METHIMAZOLE (TAPAZOLE) THERAPY

REPORT OF THREE CASES

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and
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Methimazole (Tapazole) has generally been accepted as an effective antithyroid agent. Clinical studies have shown it to be the most potent compound available today.[1] The high potency of methimazole suggested that it might produce less toxic reactions than other antithyroid drugs, since the required dose would be smaller. The number of reported cases is not large enough to draw any statistically accurate conclusions, but early reports seem to indicate that the incidence of toxicity from methimazole is about the same as that from propylthiouracil. Recently, we have seen three patients in whom unusual and distressing side-effects developed while receiving methimazole: two completely lost their sense of taste, and a third lost sensations of both taste and smell. In all three, the senses returned two or three weeks after administration of the drug was discontinued.

REPORT OF CASES

CASE 1.—A 55-year-old man was seen at Emory University Hospital with severe angina pectoris and cardiac insufficiency. His disabling symptoms had not been relieved by the usual cardiac medicaments. He was given methimazole, 40 mg. per day, in preparation for radioactive iodine therapy, in an attempt to reduce the severity of his anginal attacks. After four weeks of methimazole therapy he lost his ability to taste. There was no evidence of agranulocytosis or any other sign of toxicity. Taste sensation was tested with salty, sour, bitter, and sweet substances, but the patient was unable to identify any of them. He was tested with familiar liquids, such as mouth wash, fruit juice, and familiar beverages, but he recognized none of them. His sense of smell was found to be intact. Pain and temperature perception of the tongue were not lost. The methimazole therapy was stopped immediately. The patient gradually regained his taste after three distressful weeks. None of his usual cardiac medication was stopped.

CASE 2.—A 31-year-old woman who had rheumatic heart disease, with mitral stenosis and auricular fibrillation, was seen at Emory University Hospital. She had undergone mitral-valvuloplasty seven months previously, with considerable improvement in the heart failure, although cardiac compensation could not be regained because of rapid auricular fibrillation, which had defied control. The patient was given methimazole, 30 mg. per day, in preparation for radioactive iodine therapy. After 31 days she seemed to have lost all sense of taste. On testing, this was found to be true, although she retained perception of pain and temperature in her tongue. Her sense of smell was intact. The methimazole therapy was stopped, and the patient gradually regained her sense of taste after 12 days. There was no other evidence of toxicity. No other drugs had been withdrawn except the methimazole.

CASE 3.—A 30-year-old housewife, who was being treated with methimazole for thyrotoxicosis, was seen at the Massachusetts General Hospital. She had a badly excoriated dermatitis of the hands, arms, and perineal area of several years' duration at the time of admission. Methimazole therapy was started in a dose of 10 mg. three times a day. The patient also received five drops of saturated solution of potassium iodide once daily. After three weeks of this therapy, the patient suddenly completely lost her senses of smell and taste. The rash had become generalized meanwhile, and fever and muscular aching had developed. Methimazole was withdrawn on the fourth week of therapy, and propylthiouracil, 100 mg. every eight hours, was substituted. There was a prompt subsidence of fever and a rapid clearing of the rash. The patient's taste and smell sensations began to return 10 days later. Taste of sweet and salt returned first. Recovery was rapid, occurring over a period of several days, and there was no residual deficit. The patient's goiter was removed as soon as she was euthyroid, and her subsequent course has been uneventful.

COMMENT

Loss of taste has also been observed as a toxic effect of methylthiouracil. Schneeberg recently reported two cases.[2] There are several reasons why ageusia may develop. Hysteria is probably the commonest explanation. This was seriously considered in our cases but seemed unlikely. Peripheral nerve damage can produce ageusia in two ways: (1) by bilateral involvement of the gustatory function of the 7th, 9th, and 10th cranial nerves and (2) by means of a unilateral facial nerve lesion, which obtunds taste sensation on one side of the tongue, with complete subjective ageusia resulting from hysteria. It is also possible to have complete loss of taste from an oblongatal lesion of the nuclear region of the ninth nerve.[3] In this situation, the roots are usually bilaterally affected; it may sometimes be seen in multiple sclerosis and syringomyelia. Involvement of the sensory receptors themselves would seem to be the most logical explanation of the sensory defects of our three patients. There was, however, no evidence of damage or inflammation on physical examination.

SUMMARY

Three cases in which loss of taste occurred while the patients were being treated with methimazole are reported. In one patient, sensation of both taste and smell were lost. In all three, the senses returned when the drug was withdrawn. The site of the lesion could not be localized, but several possibilities are suggested.

ADDENDUM

Two additional cases similar to case 1 have been observed since this report was submitted. In both, the condition cleared rapidly after use of the drug was discontinued.

From the medical services of Emory University Hospital, Atlanta.

Case 3 is reported with the permission of Dr. John B. Stanbury, Massachusetts General Hospital, Boston.

1. Stanley, M. M., and Astwood, E. B.: 1-Methyl-2-Mercaptoimidazole: An Antithyroid Compound Highly Active in Man, Endocrinology **44**: 588, 1949. Hallman, B. L., and Bondy, P. K.: Experience with Methimazole (Tapazole) in the Treatment of Hyperthyroidism, Am. J. Med. **11**: 724, 1951. Bartels, E. C., and Sjogren, R.: 1-Methyl 2-Mercaptoimidazole: A New Active Antithyroid Agent, J. Clin. Endocrinol. **11**: 1057, 1951.

2. Schneeberg, N. G.: Loss of Taste Due to Methylthiouracil Therapy, J. A. M. A. **149**: 1091 (July 19) 1952.

3. De Jong, H. N.: The Neurological Examination: Incorporating the Fundamentals of Neuroanatomy and Neurophysiology, New York, Paul B. Hoeber, Inc., 1950.

SPECIAL ARTICLE

PRIMER ON THE RHEUMATIC DISEASES

Prepared by a Committee of the American Rheumatism Association

The following nine pages comprise the first part of the revision of the Primer on the Rheumatic Diseases that was published in THE JOURNAL, *April 16, 1949. The remainder of the article will appear in the two succeeding issues of* THE JOURNAL.—ED.

INTRODUCTION

This is the fourth edition of the Primer. The first was published by the American Committee for the Control of Rheumatism in 1934 in cooperation with the Committee on Scientific Exhibit of the American Medical Association. A second edition, devoted only to arthritis, was published in 1942 by a committee of the American Rheumatism Association, the latter organization having meanwhile succeeded the American Committee for the Control of Rheumatism. In 1949 a third edition, concerned with the rheumatic diseases as a whole, was brought out to be available at the time of the Seventh International Congress on Rheumatic Diseases held in New York City of that year. The timing of that publication was such that the enormously important discovery of the effect of cortisone and corticotropin on certain of the rheumatic diseases could be referred to only in a short addendum. Now advances resulting from that and other developments require this fourth edition to bring the Primer up to date in 1953.

SCOPE OF THE PRIMER

This edition is concerned with the rheumatic diseases in general. As in the case of the previous primers, its purpose is to present its subject matter as simply and briefly as is consistent with adequate coverage and to present it from the point of view of the general physician rather than from that of the specialist.

The term "rheumatism" as employed here includes that large and rather miscellaneous group of diseases and disorders of the supporting tissues that are the concern of the American Rheumatism Association. These conditions include rheumatic fever; the various forms of arthritis; the large group of less clearly defined disorders such as fibrositis, myositis, bursitis, neuritis, and neuralgia; and, in this edition for the first time, the group of so-called collagen diseases,[1] i. e., lupus erythematosus disseminatus, periarteritis nodosa, scleroderma, and dermatomyositis. It is not intended to include those structural defects of the bones and joints that are the primary concern of the orthopedic surgeon, although many of these are listed in the classification for the sake of completeness.

Because of the condensed nature of this Primer, it has not seemed advisable to refer to specific articles in the medical literature; however, a number of general references are cited in the bibliography.[2] The interested reader should consult the "Review of American and English Literature"[3] that appears in the *Annals of Internal Medicine* under the editorship of a committee of the American Rheumatism Association.

INCIDENCE OF RHEUMATIC DISEASES

In 1938 the United States Public Health Service reported a survey of the calculated incidence of a large number of diseases in the United States. The results, which are summarized in table 1, indicated that the rheumatic diseases are the commonest cause of chronic illness and that they disable each year 10 times as many persons as diabetes and tuberculosis, seven times as many as cancer, and twice as many as heart diseases. Furthermore, the rheumatic diseases enumerated in the survey included arthritis, gout, neuralgias, neuritis, lumbago and the like, but did not include rheumatic heart disease. Hence, if corrected for the latter, the incidence would have been found to be even higher.

In respect to days lost from work, the rheumatic diseases were surpassed only by nervous and mental diseases, as shown in table 2. The estimated cost of medical care alone for the patients exceeded 100 million dollars annually, but to this must be added untold amounts due to losses in production and education occasioned by disability among workers and students. These indications of the enormous economic loss resulting from rheumatism are borne out by data from other countries. In England, for example, it has been estimated that rheumatism causes one-sixth of the total industrial disability, and one-sixteenth of all funds paid out by that country for pensionable invalidism is for the rheumatic diseases.

It must be emphasized that the rheumatic diseases in tables 1 and 2 include far more than arthritis and that

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The Committee of the American Rheumatism Association consists of Dr. Charles Ragan, New York, Chairman; Dr. Harry A. Feldman, Syracuse, Dr. William S. Clark, Cleveland, Drs. Edward E. Fischel, Edward Lowman, Currier McEwen, and Morris Ziff, New York, and Drs. Joseph L. Hollander and Ralph A. Jessar, Philadelphia.

1. This is an unsatisfactory term used to describe various disseminated, inflammatory diseases of connective tissue of unknown etiology. We have no alternative descriptive term to offer at this time.

2. (*a*) Committee on Prevention of Rheumatic Fever, appointed by the American Council on Rheumatic Fever: Prevention of Rheumatic Fever, in Statements of American Heart Association Council on Rheumatic Fever and Congenital Heart Disease, correspondence, J. A. M. A. **151:** 141 (Jan. 10) 1953. (*b*) Bennett, G. A.; Waine, H., and Bauer, W.: Changes in the Knee Joint at Various Ages: With Particular Reference to the Nature and Development of Degenerative Joint Disease, New York, The Commonwealth Fund, 1942. (*c*) Dawson, M .H.: Chronic Arthritis, revised by C. Ragan, in Nelson's Loose-Leaf Medicine, New York, Thomas Nelson and Sons, 1948, vol. 5, pp. 605-644A. (*d*) Comroe, B. I.: Arthritis and Allied Conditions, edited by J. L. Hollander, and others, ed. 5, Philadelphia, Lea & Febiger, 1953. (*e*) McEwen, C.: Rheumatic Heart Disease, in Diagnosis and Treatment of Cardiovascular Diseases, edited by W. C. Stroud, ed. 4, Philadelphia, F. A. Davis Co., 1949. (*f*) Steinbrocker, O.: Arthritis in Modern Practice: The Diagnosis and Management of Rheumatic and Allied Conditions, Philadelphia, W. B. Saunders Company, 1941. (*g*) Swift, H. F.: The Streptococci, in Dubos, R. J.: Bacterial and Mycotic Infections of Man, Philadelphia, J. B. Lippincott Company, 1948, p. 237. (*h*) Talbott, J. H.: Gout, edited by H. A. Christian, reprinted from Oxford Loose-Leaf Medicine, New York, Oxford University Press, 1943.

3. Robinson, W. D., and others: Rheumatism and Arthritis: Review of American and English Literature of Recent Years, Ann. Int. Med., to be published.

figures of the magnitude shown are arrived at by the inclusion of fibrosis, bursitis, and other nonarticular forms of rheumatism.

A somewhat similar study reported by Woolsey of the United States Public Health Service in 1952 was based

TABLE 1.—*Estimated Prevalence of Specified Chronic Diseases in the United States (1937)*

Disease	Number of Cases
Rheumatism	6,850,000
Heart disease	3,700,000
Arteriosclerosis and high blood pressure	3,700,000
Hay fever and asthma	3,450,000
Hernia	2,100,000
Hemorrhoids	2,000,000
Varicose veins	1,750,000
Chronic bronchitis	1,700,000
Nephritis and other kidney diseases	1,550,000
Nervous and mental diseases	1,450,000
Goiter and other thyroid diseases	1,200,000
Sinusitis	1,150,000
Cancer and other tumors	930,000
Diseases of female organs	720,000
Tuberculosis, all forms	680,000
Diabetes mellitus	660,000
Diseases of gallbladder and liver	640,000
Other diseases of the circulatory system	440,000
Chronic tonsillitis and other throat disorders	380,000
Ulcers of stomach and duodenum	330,000
Diseases of bladder and urethra	270,000
Chronic diseases of the skin	270,000
Anemia	240,000
Chronic appendicitis	170,000
Chronic diseases of the eye	150,000
Chronic diseases of the ear	100,000
Chronic pleurisy	90,000
Diseases of the prostate and male genitourinary organs	80,000

From The National Health Survey, Bulletin 6, Sickness and Medical Care Series, United States Treasury Department, Public Health Service, 1938.

on a sample of some 25,000 households scattered in 68 sample areas in 42 states. The results bore out the earlier study, and indicated that in 1951 approximately 10,104,000 persons 14 years of age and over in the United States believed they were victims of arthritis or rheumatism and that in some 6,414,000 the diagnosis had been confirmed by a physician. Furthermore, about one-fourth of the 10,000,000 patients had made some significant change in the amount or type of their work as a result of their illness. In this study, as in the earlier one, rheumatic fever and rheumatic heart disease were excluded.

Crude as are these estimates of the total prevalence of rheumatic diseases, data on the incidence of individual rheumatic diseases are even more inadequate. It has been estimated that in general office or general clinic practice the distribution of rheumatic diseases in 100 patients who complain of rheumatism sufficiently to make them consult a physician is approximately as follows: 1 with rheumatic fever; 2 with gonococcic arthritis; 3 to 5 with miscellaneous forms (tuberculous arthritis, arthritis with ulcerative colitis, Charcot's joints, etc.); 3 to 5 with gout; 7 to 10 with traumatic arthritis; 10 to 20 with nonarticular rheumatism; 25 to 30 with degenerative joint disease; and 30 to 40 with rheumatoid arthritis. These figures probably are little better than guesses, however. It has been reported that in Sweden, in 1943, 0.12% of the population sought medical care because of rheumatic fever; 0.25% because of rheumatoid arthritis; 0.17% because of degenerative joint disease; and 0.4% because of nonarticular forms of rheumatism. Thus a total of 0.9% of the population of that country were victims of the rheumatic diseases in that year.

ORGANIZATION OF THE ATTACK AGAINST THE RHEUMATIC DISEASES

It is obvious that a group of diseases having the numerical and economic importance of those with which we are dealing demands an organized effort to combat it. One of the earliest organized attempts to study the rheumatic diseases was started in England with the Cambridge Committee for the Study of Special Diseases; this study was interrupted by World War I. In 1920, the Ligue Internationale contre le Rheumatisme was established with headquarters at the Hague. Although originally composed principally of European representatives, the league encouraged the establishment in other countries of groups interested in the problem. This movement extended to the United States in 1928, with the formation

TABLE 2.—*Estimated Annual Number of Days Lost from Work or Other Usual Pursuits by Reason of Specific Chronic Diseases (United States, 1937)*

Disease	Annual Number of Days Lost
Nervous and mental diseases	132,500,000
Rheumatism	97,200,000
Heart disease	95,200,000
Arteriosclerosis and high blood pressure	56,900,000
Tuberculosis, all forms	41,400,000
Cancer and other tumors	36,300,000
Nephritis and other kidney diseases	28,400,000
Diseases of the female organs	26,800,000
Hay fever and asthma	21,900,000
Diseases of gallbladder and liver	20,000,000
Diabetes mellitus	19,200,000
Ulcers of the stomach and duodenum	13,600,000
Hernia	13,600,000
Chronic diseases of the skin	10,300,000
Anemia	8,500,000
Diseases of the bladder and urethra	8,200,000
Chronic bronchitis	8,000,000
Chronic appendicitis	7,600,000
Goiter and other thyroid diseases	7,600,000
Other diseases of the circulatory system	6,600,000
Sinusitis	6,000,000
Varicose veins	5,900,000
Chronic tonsillitis and other throat infections	5,400,000
Hemorrhoids	5,100,000
Chronic pleurisy	4,200,000
Chronic diseases of the eye	4,200,000
Chronic diseases of the ear	3,300,000
Disease of the prostate and male genitourinary organs	3,300,000

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of the American Committee for the Control of Rheumatism. This committee worked actively to arouse the interest of the profession in the magnitude of the sociologic problem presented and to extend knowledge of the rheumatic diseases by means of publications and through

exhibits in connection with the Scientific Exhibit of the American Medical Association. By 1930, it was apparent that there should be a national society for the study and control of the rheumatic diseases, and the American Rheumatism Association was founded. The association holds yearly scientific meetings, sponsors an extensive annual review of the English and American literature and promotes wider interest and more precise knowledge concerning these disorders. The formation of affiliated societies at state, regional, or local levels has been encouraged.

Seven international congresses have been held under the auspices of the Ligue Internationale contre le Rheumatism. The eighth will be in Geneva from Aug. 24 to 28, 1953.

Just before the entry of the United States into World War II, a committee of the American Rheumatism Association was appointed to study the possibility of undertaking a national fund-raising effort to support research and teaching and the care of patients with rheumatic diseases. This important undertaking was delayed by the outbreak of hostilities, but after the end of the war rapid progress was made. Under the sponsorship of the American Rheumatism Association, a separate organization, the Arthritis and Rheumatism Foundation, was established, with a board composed of physicians and influential laymen for the purpose of organizing an appeal for funds on both a national and a local basis. Finally, all interested in the rheumatic diseases were heartened by the establishment of the National Institute of Arthritis and Metabolic Diseases in 1951 by act of Congress. Thus, at long last, a nation-wide program has been inaugurated that can permit an organized attack on this serious group of diseases that afflicts so many millions of persons and causes such a vast economic loss to the nation.

CLASSIFICATION

Rheumatic diseases may be roughly divided into rheumatic fever, arthritis, the periarticular and nonarticular forms of "rheumatism" such as fibrositis, bursitis and myositis, and the "collagen diseases." The majority of cases fall into eight important groups: (1) arthritis due to microbial agents, (2) rheumatic fever, (3) rheumatoid arthritis, (4) the "collagen diseases," (5) degenerative joint disease, (6) arthritis due to direct trauma, (7) arthritis of gout, and (8) the nonarticular forms of rheumatism. No classification of diseases can be entirely satisfactory while the cause of many of those diseases remains unknown. The classification shown in table 3 is admittedly imperfect, but it has great merit in that it has been adopted as official by both the American Rheumatism Association and the Standard Nomenclature of Disease, and much confusion in terminology will be avoided by its use.

These various forms of rheumatic diseases are discussed in the pages that follow; hence only a few comments are called for at this point:

1. Under the heading of rheumatoid arthritis are included certain diseases that are thought to be variants of classic rheumatoid arthritis, such as Still's disease, Marie-Strümpell disease or ankylosing spondylitis, and the arthritis associated with psoriasis. Hence these should be listed as rheumatoid arthritis, but, because the relationship is not established with certainty, the other name should be added in parentheses.

2. It is now accepted that degenerative joint disease is a process related to advancing age and "wear and tear." Hence it occurs in multiple joints with greater or lesser symptoms in all persons who live long enough. The nature of this disease is incompletely understood, and therefore in table 3 it is noted as "due to unknown causes." Other cases, however, occur in younger persons and usually involve only one or two joints. Careful history and examination will usually reveal one of three predisposing causes in such cases that hastened the wear and tear in those particular joints. These are: (1) congenital defects, (2) previous important injury, or (3)

TABLE 3.—*Classification of Rheumatic Diseases*

Arthritis due to infection. *Specify joint and infection when known, as:*
- Arthritis of spine due to tuberculosis
- Arthritis of knee due to gonococcic infection
- Arthritis of wrist due to pneumococcic infection
- Arthritis of knee due to syphilis

Arthritis due to rheumatic fever. *Record Rheumatic fever as primary diagnosis invariably*

Arthritis, rheumatoid, of . . . .*Specify as:*
- Arthritis, rheumatoid, multiple (proliferative arthritis,* atrophic arthritis,* chronic infectious arthritis,* Still's disease *)
- Arthritis, rheumatoid of spine (Marie-Strümpell arthritis,* ankylosing spondylitis,* von Bechterew spondylitis,* spondylitis ankylopoietica,* spondylitis rhizomelique *)

Arthritis due to direct trauma of . . . .*Specify joint and trauma, as:*
- Arthritis of knee due to contusion
- Arthritis of elbow due to habitual dislocation

Neurogenic arthropathy. (Charcot joint *) *Specify joint and cause, as:*
- Tabetic arthropathy of knee

Arthritis due to gout. *Specify joint. Record Gout as primary diagnosis invariably*

Degenerative joint disease, multiple, due to unknown cause (osteoarthritis,* hypertrophic arthritis,* degenerative arthritis,* chronic senescent arthritis *)

New growths of joints. *Specify joint and neoplasm as:*
- Synovioma of knee

Hydrarthrosis, intermittent, of . . . .*Specify joint*

Fibrositis. *Specify joint or area*

Myositis, bursitis, neuritis, and neuralgia. *Specify muscle, bursa or nerve involved*

Diseases in which arthritis, arthropathy or arthralgia is frequently associated (diagnose disease, list joint manifestation as symptom)
- Acromegaly
- Acute disseminated lupus erythematosus
- Cyst of meniscus of knee
- Dermatomyositis
- Drug intoxication. *Specify drug when known*
- Erythema multiforme exudativum
- Erythema nodosum
- Hemophilia
- Hysteria
- Ochronosis
- Osteochondritis dissecans
- Osteochondromatosis
- Periarteritis nodosa
- Psoriasis
- Purpura, various types
- Raynaud's disease
- Reiter's disease
- Scleroderma
- Serum sickness

* Names in parentheses are synonyms.

previous arthritis of other types. In these instances the predisposing cause should be noted in the diagnosis, as, for example, "degenerative joint disease of the right knee secondary to old intracapsular fracture."

3. The term "mixed arthritis" is to be avoided. When employed in the past, it has usually been applied to patients who showed evidences of both rheumatoid arthritis and degenerative joint disease. A preferable diagnosis in such cases is "rheumatoid arthritis," if that is the cause of the major disability or, rarely, "degenerative joint disease secondary to inactive rheumatoid arthritis," if the latter disease, as such, contributes little to the disability.

ARTHRITIS DUE TO MICROBIAL AGENTS

This section is concerned with diseases of the joints that result from infection with the following microorganisms:

Brucella	Staphylococcus
Gonococcus	Streptococcus
Meningococcus	Treponema pallidum
Pneumococcus	Tubercle bacillus

Infections of the joints caused by Salmonella typhosa, Escherichia coli, Donovania granulomatis, Streptobacillus moniliformis (Haverhill fever), certain filterable viruses, and fungi are not considered in detail because of their relative infrequency.

ACUTE PYOGENIC ARTHRITIS

Arthritides produced by infection with the various pyogenic cocci (gonococcus, meningococcus, pneumococcus, Staphylococcus, and Streptococcus) conveniently can be described as a group because of the similarity of their clinical expressions.

Incidence and Pathogenesis.—The incidence of acute infectious arthritis has decreased considerably because the organisms usually causing joint infection are sensitive to various antimicrobial agents, and early treatment probably prevents joint invasion. More than one-half of the cases are produced by the Staphylococcus and hemolytic Streptococcus organisms.

Pathology.—While the pathological changes vary somewhat with the severity and duration of the infection, the histological appearance is that of an acute, suppurative, inflammatory reaction. The synovial tissue is hyperemic, swollen, thickened, and infiltrated with cells that are predominantly polymorphonuclear leukocytes. The articular cartilage may become ulcerated and irreparably destroyed, with ankylosis as the end result. Abscesses may form in the marrow of the subchondral bone, and the soft periarticular structures are often acutely inflamed.

Symptoms.—The systemic disease may be so severe and the arthritis so mild, relatively, that the joint infection may be overlooked. In other patients the arthritis may be unaccompanied by constitutional signs and the primary focus of infection remain obscure. Generally, the onset is sudden, with fever, chills, sweats, malaise, and anorexia, and the joint is exquisitely painful, red, warm, and swollen. Its capsule is distended by effusion, and the adjacent muscles are in spasm. Tenosynovitis and bursitis may be associated features. Usually one or two joints are affected, but multiple joints may be involved and none is exempt. Spondylitis and infection of the sacroiliac joint are not frequent.

Laboratory Observations.—An elevated erythrocyte sedimentation rate and leukocytosis (15,000 or more) with a rise in the percentage of polymorphonuclear cells are common. Since the causative micro-organism may be demonstrated frequently by blood cultures, one or more cultures should be taken before antimicrobial therapy is begun. In typical instances, the synovial fluid is cloudy or frankly purulent and the leukocytes may number more than 100,000 per cubic millimeter, with 90% or more polymorphonuclear cells. The organism causing the arthritis can usually be demonstrated by bacteriological examination (both smear and culture) of aspirated synovial fluid.

Roentgenologic Changes. — Roentgenographic changes do not usually occur in the first 10 days of the disease and, when present, are of prognostic rather than diagnostic value in most instances. Damage to the articular cartilage and its adjacent bone may be evidenced by osteoporosis, periostitis, osteomyelitis, or epiphysitis.

Diagnosis.—An abrupt onset of red, warm, swollen, exquisitely painful and tender joint or joints sometimes preceded by mild polyarthritis, associated with fever, leukocytosis, and a rapid sedimentation rate is characteristic of both suppurative arthritis and acute gout. The presence of bacteremia and the absence of hyperuricemia make the diagnosis of suppurative arthritis almost conclusive. Demonstration of the organism by smear or culture of synovial fluid proves the diagnosis.

Prognosis and Course.—The prognosis as to life is generally determined by the nature and severity of the systemic disease. Probably the most important factor in determining to what extent joint function will be restored is the time that elapses between the onset of symptoms and the institution of specific treatment. Therapeutic results are decidedly better if treatment is begun during the first rather than the second week of infection. The end results are generally poor if treatment is started during the third week or later.

Treatment.—The guiding principles of treatment are (*a*) to control the joint infection before the articular cartilage is destroyed, and (*b*) to begin motion before adhesions and muscle atrophy develop. Prompt bacteriological diagnosis is essential for the early selection of the proper chemotherapeutic agent. It is generally wise to immobilize the joint in good position as soon as the diagnosis has been made. Hemolytic streptococci, pneumococci and meningococci, as a rule, are sensitive to both penicillin and sulfonamide compounds. Staphylococci and gonococci are more susceptible to the action of penicillin and often are resistant to the sulfonamide compounds. These drugs permeate inflamed synovial tissue, and oral or intramuscular administration in adequate dosage usually obviates the need for intra-articular injections. On the average, 100,000 units of penicillin may be administered intramuscularly, every three hours, or 1.0 gm. (15 grains) of sulfadiazine by mouth every four hours until the temperature is normal and the synovial fluid sterile. It is better to err on the side of using a too large dose of antimicrobial agents. When the joint

fluid becomes sterile, the excess fluid will be absorbed gradually even after chemotherapy has been stopped. If the infectious process does not respond to oral and intramuscular antimicrobial therapy, intra-articular instillation of penicillin (20,000 units in 10 cc. of isotonic sodium chloride solution every 24 or 48 hours) or, in exceptional situations, surgical drainage may become necessary. Contamination of the joint space with even minute amounts of procaine may inhibit the action of sulfonamides. Should neither penicillin nor sulfonamides be effective, or the patient not be able to tolerate either because of sensitivity, or studies of the offending organism's susceptibility indicate it, then the use of newer antibiotics must be considered.

Immobilization of the joint by splints or traction may be discontinued when the arthritis has subsided, but active motion within the range of the patient's capacity to tolerate the discomfort should be instituted as early as possible while the joint is in the cast or traction. This will promote better functional results and shorten the period of disability.

Features Associated with Specific Pyogenic Arthritides.—In addition to the foregoing comments, certain features of gonococcic and meningococcic arthritis warrant further mention.

(*a*) Gonococcic Arthritis: The incidence of articular complications of gonorrhea has decreased markedly, largely because of the effectiveness of penicillin, which cures 95% or more of the cases of uncomplicated gonorrhea. While the organism invades the synovial tissues from the primary focus in the genitourinary tract, it is unusual to recover the causative agent from the blood. Arthritis usually appears within 10 to 30 days after the initial infection, but longer periods may intervene between the urethritis and arthritis. The onset is sudden, usually with an acute migratory polyarthritis that in a few days to a week frequently become monarticular. Acute tenosynovitis occurs more frequently than in any other type of arthritis, particularly when the wrists or small joints of the hands or feet are affected.

Cultures of exudate and synovial fluid will yield positive results more frequently than smears, but on occasion the smear may be suggestive and the culture negative so that both procedures should be performed. The value of the gonococcus complement fixation test is now in considerable doubt. There are no roentgen changes sufficiently characteristic of gonococcic arthritis to distinguish it from other types of suppurative joint disease.

The diagnosis of gonococcic arthritis may be considered on the basis of (1) history of exposure and typical clinical course; (2) demonstration of the gonococcus in the urethral exudate; (3) positive culture or smear of the synovial fluid; (4) recovery or definite improvement with penicillin therapy. In the absence of (3), the diagnosis is presumptive; in the absence of (3) and (4), it should be carefully reconsidered, as rheumatoid arthritis or acute rheumatic fever may be the correct diagnosis.

(*b*) Meningococcic Arthritis: The incidence of articular complications of meningococcic infections varies considerably in different reports. There are two general types of arthritis associated with this disease: (1) a transient synovitis during the first few days that may resolve spontaneously and (2) full-blown arthritis with effusion. In the first group, arthralgia may be the only manifestation but often the joints are tender and red. Multiple joints are frequently involved, and normal joint function is restored in a few days.

The second group tends to occur toward the end of the first week of illness and is caused by invasion and damage of the synovial tissue. This type usually is monarticular and the knee or wrist are commonly affected, but any peripheral joint may be involved. The diagnosis of meningococcic arthritis can be proved only by recovery of the organism from the joint fluid. The bacteremia and arthritis usually respond satisfactorily to sulfonamide compounds (orally, subcutaneously or intravenously) or penicillin (intramuscularly), but the former is the drug of choice.

BRUCELLOSIS

Incidence.—While the annual number of new cases of brucellosis has been increasing steadily in this country, it remains a disease of the dairy areas. Approximately half of the patients with brucellosis experience arthralgia or myalgia, but objective signs of osteoarticular involvement are unusual and permanent joint damage is rare.

Symptoms.—Brucellosis may assume an acute or chronic form. Fever, chilliness, fatigability, sweating, malaise, generalized pains, headache, depression, nervousness, and insomnia may all occur during the acute phase. In contrast to these symptoms, physical signs are few. Arthritis, when present, most usually involves the hip or vertebral column and occurs during the acute stage of brucellosis.

Diagnosis.—There are no pathognomonic clinical features of the systemic infection or the arthritis. Demonstration of the offending organism in cultures of blood or synovial fluid is conclusive evidence of infection. Agglutination, complement fixation, bactericidal, skin, and opsonocytophagic tests have been developed but require careful interpretation. The agglutination test is the simplest and most useful of these. Because skin testing may stimulate the production of agglutinins, its value is decidedly limited.

Prognosis.—The duration of brucellosis is variable and may be protracted. The arthritis does not influence the over-all prognosis significantly, and it is questionable as to whether it ever results in permanent deformity.

Treatment.—The physician now has his choice of several therapeutic measures capable of yielding good results in the treatment of brucellosis. Aureomycin or oxytetracycline (Terramycin) may be used alone or, preferably, in combination with streptomycin. Daily doses of 2.0 gm. (0.5 gm. four times daily) of one of the two drugs may be coupled with 0.5 gm. of the streptomycin, administered twice daily by intramuscular injection. If one prescribes sulfadiazine in combination with injections of streptomycin and the response is not considered adequate, then the sulfadiazine should be replaced, in this regimen, by aureomycin or oxytetracycline.

TUBERCULOUS ARTHRITIS AND SPONDYLITIS

Incidence.—Although the incidence of tuberculosis of bone and joints is declining in this country, it still develops in approximately 4% of patients with tuberculosis.

Etiology and Pathogenesis.—Human tuberculosis in the United States is caused almost exclusively by the human type tubercle bacillus. Generally a primary tuberculous lesion develops in the lung or pleura as a result of infection through inhalation. The bacilli spread from this focus to the bronchopulmonary lymph nodes, where, under suitable circumstances, hematogenous dissemination results. Organisms metastasize by this route to bone or directly to synovial tissue. Bacilli may also travel through lymph channels from the pleura to the vertebral column and thus produce a lesion of bone. The primary focus of tuberculosis, from which the hematogenous or lymphogenous spread commences, may often not be diagnosed clinically and the bone disease then appears to be "primary" in character.

Approximately 85% of cases of tuberculous arthritis develop before the age of 14, although it may occur at any age. Negroes are especially susceptible, presumably because of the greater incidence of hematogenous dissemination in this race.

Pathology.—The joints of the lower limbs are involved much more frequently than those of the upper, but the spine (Pott's disease) is affected oftener than any peripheral joint. The bodies of the lower thoracic and upper lumbar vertebrae are the commonest site of infection. As caseation ensues, the bone loses strength and collapses, and spread occurs from the area. The infection then extends along the anterior or posterior longitudinal ligaments and eventually involves several vertebrae, both proximally and distally. In some cases infection spreads from one vertebra to the next through the intervertebral disc, which may be eroded early. The natural course of tuberculosis in bone, as in the lung, is characterized by liquefaction necrosis (caseation) and eventual abscess formation. The contents of the abscess usually dissect between fascial planes or muscle bundles and often may rupture through and leave a discharging sinus at a distant point. When resistance to invasion is good, the infection may become quiescent and finally arrested with resolution of the lesion and healing by fibrosis or bony fusion.

Tuberculosis of the peripheral joints may result either by direct hematogenous dissemination of bacilli to the synovial tissue (tuberculous synovitis) or by the penetration into the joint of bacilli from adjacent diseased bone. The granulation tissue that forms in the joint undermines and separates the articular cartilage. Periarticular swelling develops, with relatively little effusion. Caseation, abscess, and sinus formation may also result, and the articular cortex and neighboring bones are often destroyed. The gross pathological appearance of a tuberculous joint may not be distinguishable from that of rheumatoid arthritis.

Clinical Features.—(*a*) Tuberculous Spondylitis and Arthritis: Tuberculous spondylitis (Pott's disease) and arthritis are both characterized by an insidious onset, a chronic, progressive course with spontaneous regressions, and exacerbations involving, usually, a single joint. Occasionally two and, rarely, three or more joints or vertebrae may be infected. Tuberculous arthritis resembles other forms of arthritis in that spasm of the regional muscles is severe and disabling. It differs from them in that, while muscle atrophy is relatively early and prominent, articular pain and tenderness appear comparatively late. The typical tuberculous joint is warm, boggy, and swollen. The "doughy" feeling and swelling are due chiefly to edema and infiltration of the synovial tissue rather than to effusion. Redness may be present early but is usually absent in the advanced stages. Constitutional symptoms, such as fever, loss of weight or sweating, usually are not conspicuous. Not infrequently the patient emphasizes trauma in the history of events immediately preceding the arthritis.

(*b*) Tuberculous Rheumatism: Tuberculous rheumatism (Poncet's disease) by description is a nondestructive, polyarthritis resembling either rheumatic fever or rheumatoid arthritis and occurring in a patient who has a tuberculous lesion elsewhere. It is doubtful whether such an entity exists, and arthritis so diagnosed is probably some other type of joint disease occurring in patients who have tuberculosis coincidentally.

Associated Features and Complications.—The commonest complication of tuberculous arthritis is abscess formation in the paravertebral region or in the vertebral bodies when the spine is affected and in the bone or periarticular soft structures when a peripheral joint is involved. Sinuses originating close to or distant from an abscess or joint are frequent and when present suggest the diagnosis. Meningitis and paraplegia are not uncommon in Pott's disease. Secondary amyloidosis may develop if the tuberculous infection is prolonged.

Laboratory Observations.—The total and differential leukocyte counts are usually normal, and the erythrocyte sedimentation rate is generally elevated. Tubercle bacilli may be found in the synovial fluid, synovial tissue, or the pus aspirated from an abscess or expressed from a sinus. They may be demonstrated by smear or recovered by culture or after the inoculation of suitable material into guinea pigs. The total cell count of the synovial fluid may exceed 100,000 per cubic millimeter. Although there may be more lymphocytes and monocytes than in other types of arthritis, the differential cell count is not specific. The protein content of the fluid is increased. Tuberculosis should be suspected if the synovial fluid analysis reveals a moderately low total white cell count, few polymorphonuclears, and a low sugar level in an effusion of short duration. A biopsy of the synovial tissue after sufficiently careful study should demonstrate tubercles and acid-fast bacilli, and local lymph nodes may show evidence of tuberculous infection.

Tuberculin Test: A positive tuberculin reaction is only suggestive but a negative reaction (in the absence of known causes of tuberculin anergy) is strong evidence against the diagnosis of tuberculous arthritis.

Roentgenologic Observations.—The first signs consist of periarticular swelling, synovial effusion, and thickening. Decalcification of bone and marginal erosion with thinning and interruption of the articular cortex follow. The joint space is preserved until late, but in advanced stages, sequestration, abscess, and sinus formation may become evident as bone destruction progresses. Calcium deposition and new bone formation are conspicuously absent. These roentgenographic changes are not pathognomonic, since similar changes may be seen in other types of arthritis.

Course and Prognosis.—Unless the disease is checked, tuberculous arthritis follows a protracted course of progressive destruction of bone and articular structures. While spontaneous remissions and exacerbations are common, recovery of normal joint function is rare. Pott's disease carries a decidedly graver prognosis than tuberculosis of a peripheral joint, for in no type of arthritis is the mortality rate as high as in spinal tuberculosis.

Treatment.—The same principles that govern the treatment of tuberculosis elsewhere in the body apply when the bones and joints are infected. Prolonged rest and good general hygiene are desirable. Specific treatment includes local surgical and mechanical measures and chemotherapy. Most authorities agree that operation is contraindicated in the presence of actively disseminating lesions elsewhere and that the chances for healing are poor unless the local process has become quiescent and stabilized. There is general agreement that children should be treated preferably by nonoperative measures (traction, splints, or braces) because epiphyseal growth is active.

Specific antituberculosis drugs are probably indicated in every case of tuberculous arthritis and spondylitis. Streptomycin, combined with either para-aminosalicylic acid or isoniazid, or both, may be the sole treatment in some cases, but oftener they are necessary adjuncts to surgery. The timing of the chemotherapeutic portion of the over-all treatment program requires considerable experience. Once started, the drug therapy must be continued for a minimum period of six months, with one year closer to the ideal. When combined with a surgical procedure, the decision as to kind and time rests with the surgeon. The usual dose of streptomycin is 3 to 5 gm. weekly, while 12 gm. of para-aminosalicylic acid is usually given each day. Isoniazid is employed in daily doses of 5 mg. per kilogram of body weight. The prognosis of tuberculous arthritis and spondylitis treated with combined drugs and operative procedures has improved significantly during the past five years, both as regards recovery of function and a decreased mortality rate.

SYPHILITIC ARTHRITIS

The incidence of syphilitic joint disease has been declining steadily because of earlier, more effective antisyphilitic therapy. Arthritis may occur at any age as a complication of either the congenital or acquired disease and may result from direct spirochetal infection of the joints or from neurogenic changes (Charcot's joints) secondary to tabes. The latter constitutes about half of the patients in the acquired group. The joint complications of syphilis may manifest themselves as arthralgia (early, acute syphilis), osteochondritis, epiphysitis (infants), periostitis, painless, symmetrical synovitis, (Clutton's joints in 8 to 16-year-old children, frequently with interstitial keratitis), gummatous lesions, or Charcot's joints (in 5 to 10% of cases of tabes dorsalis).

Diagnosis.—A positive serologic test for syphilis with synovial fluid and/or blood is not conclusive evidence of syphilitic arthritis. The diagnosis is presumptive in the presence of (1) positive serologic test for syphilis; (2) other stigmas of congenital or acquired syphilis; and (3) characteristic changes in the bones as seen in roentgenograms.

Treatment.—Penicillin is the drug of choice. At least 6,000,000 units should be administered during a period of 10 days. This may be provided conveniently as 600,000 units of a slowly absorbed preparation on each of 10 consecutive days. This course may be repeated, should the therapeutic result be considered unsatisfactory.

RHEUMATIC FEVER

Rheumatic fever is an acute or chronic inflammatory process initiated by a preceding group A hemolytic streptococcic infection. The inflammation is disseminated in the connective tissues of many organs and, when pronounced, is manifested by myocarditis, valvulitis, arthritis, serositis, subcutaneous nodules, or rashes, and by generalized and nonspecific manifestations such as fever and pallor.

Incidence.—Because the disease may be relatively symptomless, its incidence is difficult to estimate. In countries where rheumatic fever is reportable, rates vary from 11 to 30 per 10,000 per year. Approximately 3% of persons carefully studied following a streptococcic throat infection manifest the clinical picture of rheumatic fever, although a much larger percentage may have but one or two of the abnormalities associated with the disease and may not seek a physician's aid initially. Rheumatic heart disease has been found in 1 to 4% of school children in different surveys. In serial autopsies at a general hospital, in about 7% of the cases rheumatic heart disease was manifest. A much higher incidence of "rheumatic-like" lesions has been reported, suggesting that there may be widespread occurrence of processes similar to rheumatic fever but quantitatively less pronounced. At least two careful, independent studies of men and women reveal that only one-third to one-half of persons with signs of rheumatic heart disease had a history of an attack of rheumatic fever, further emphasizing the problems of determining the incidence, and the basis for diagnosis, of the disease.

Diagnosis.—Rheumatic fever occurs at all ages, with the peak incidence between 6 and 9 years of age, but there is an appreciable incidence in adult life as well. In one-half to one-third of the patients, a history of an upper respiratory infection one to four weeks previously may be obtained. The well-defined case is easily recognized by the polyarticular and migratory nature of the joint involvement or the presence of cardiac manifestations of rheumatic fever, such as pericarditis, congestive heart failure, auscultory evidence of valvular disease, or a prolonged P-R interval in the electrocardiogram. Less common, but contributing strongly to the diagnosis when present, are subcutaneous nodules, erythema marginatum, and chorea. Pleuritic, precordial, or abdominal pain may occur and divert attention from the true cause if they are the only presenting symptoms. Subclinical cases may not be brought to the attention of a physician until chronic valvular heart disease is well established. The presence of any of the aforementioned localized manifestations of the disease or, indeed, of generalized manifestations such as fever or elevation of the erythrocyte sedimentation rate, particularly in a patient who has a history of pharyngitis one to six weeks previously, warrants continued observation for the possibility of rheu-

matic fever. In about 90% of patients there is serologic evidence of a preceding streptococcic infection, either in the antistreptolysin-O titer or in the less commonly employed tests for streptococcic antibodies. An elevation of the antistreptolysin-O titer may be the sole evidence of a recent, mild streptococcic infection. Occasionally rheumatic fever may be suspected only by exclusion of less likely causes of the presenting picture. Usually the differential diagnosis is readily made from other causes of arthritis: gonococcic or other joint infection, osteomyelitis, trauma, acute gout, or early rheumatoid arthritis. In doubtful cases, the response of the articular pain to full doses of salicylates is often helpful. In some instances rheumatic fever may be differentiated from early rheumatoid arthritis only by adequate observation of the course of the disease for several weeks or months, although historical or serologic evidence of a Streptococcus throat infection affords some indication of the possibility of rheumatic fever. Cardiac conditions such as congenital heart disease or tuberculous pericarditis occasionally present facets clinically compatible with rheumatic fever, but consideration of the total picture, its duration, severity, and the presence or absence of other lesions usually aid in establishing the correct diagnosis. Fever of undetermined origin may be rheumatic, but the list of other possibilities should be considered. If the patient is known to have had prior rheumatic valvular disease, repeated blood cultures may be indicated, since subacute bacterial endocarditis is a possible cause of fever in a known rheumatic person. A picture similar to rheumatic fever may be presented by a group of systemic inflammatory diseases affecting similar structures in the body; these include periarteritis nodosa, lupus erythematosus disseminatus, and dermatomyositis. These are rare enough to warrant preliminary consideration of rheumatic fever in the doubtful case. Such diseases may be recognized by careful study of the clinical picture, laboratory data, or, if necessary, biopsy material from muscle or skin lesions. Particularly confusing is the picture of drug sensitivity with fever and polyarthritis, which may occur following penicillin administration for a previous pharyngitis. The presence of cardiac abnormalities such as gallop rhythm, definite murmurs, or prolonged P-R interval in the electrocardiogram are indicative of rheumatic fever, while a pruritic rash or urticaria tend to incriminate penicillin sensitivity. The subcutaneous nodule of rheumatic fever, although relatively infrequent in the United States, may be considered as a uniquely rheumatic lesion and should be looked for periodically in doubtful cases.

Treatment.—Treatment is directed chiefly to the suppression or prevention of carditis and its sequelae. Control of fever and polyarthritis is important not only for the comfort of the patient but also because any clinical or laboratory abnormalities reflect the possibility of an associated rheumatic carditis. The joint involvement itself, however, does not lead to permanent damage. Bed rest, relief of arthritic or precordial pain, and adequate nutrition are included in the therapeutic program.

The salicylates, the antirheumatic drugs of choice, have a well-recognized antipyretic and analgesic action. They are beneficial as an anti-inflammatory agent in the great majority of patients, particularly when administered early, in adequate dosage, and continued without interruption for a long time. Contrary to traditional teaching, it appears possible that rheumatic inflammation in extra-articular areas such as the heart may also be suppressed with some benefit.

The initial dosage of either acetylsalicylic acid or sodium salicylate is approximately 1 grain (60 mg.) per pound orally in six equal parts, in patients weighing up to 150 lb. (65.4 kg.), with a decrease to about three-quarters or two-thirds of that dose after 24 to 48 hours, or earlier if moderate tinnitus, hyperventilation, or other signs of toxicity occur. Determination of salicylate blood levels is rarely needed. It appears advantageous to continue salicylate therapy for a long time rather than to run the risk of repeated relapses of rheumatic inflammatory activity on withdrawal of the drug. Mobilization, with continued salicylate medication, may be begun cautiously after all signs and symptoms of rheumatic activity have been normal for two weeks to one month, and probably longer in patients who have had serious carditis. The erythrocyte sedimentation rate is a simple and valuable test that is frequently one of the last signs of activity to return to normal, although any abnormality or sign of inflammatory activity warrants concern. Other nonspecific tests may, on occasion, be more sensitive to the presence or absence of inflammatory reaction than the erythrocyte sedimentation rate. These include the C-reactive protein, serum complement, serum hexosamine, and so-called hyaluronidase inhibitors, in addition to the older tests such as the Weltmann coagulation test. Careful observation of the patient, the temperature, pulse rate, erythrocyte sedimentation rate, and electrocardiogram even during salicylate administration may reveal that activity is still present, and mobilization may be halted accordingly. Continued salicylate administration should not blind the physician or the well-indoctrinated patient to the possibility of continuing disease. It is possible that fewer instances of chronic rheumatic activity or valvular deformity would result if the premature withdrawal of the drug to test for continued activity were avoided.

Other antipyretic drugs have been employed with some benefit. The use of aminopyrine or phenylbutazone requires careful study of the blood count and must be stopped if leukopenia or agranulocytosis occurs. The introduction of corticotropin (ACTH) and of cortisone in the management of rheumatic fever has aided in evaluating the pathogenesis and criteria for therapeusis in the disease. In carefully controlled studies, there appears to be no great difference in the rapidity and degree of recovery of patients treated with salicylates as compared with those treated with optimal doses of corticotropin or cortisone, nor does the incidence of late valvular disease in either group appear to vary, albeit it is too early to state this categorically. It is possible that, in seriously ill patients, the hormones have value and also that further benefit may be derived by combining hormone therapy with salicylate therapy. Cortisone has been administered intramuscularly in single daily doses, beginning with 300 mg. for the first two or three days and tapering to a maintenance dose of about 100 mg. per day. Cortisone given orally is faster acting and has been administered in four divided doses throughout the day

and night. Corticotropin has been used in doses of approximately 100 mg. intramuscularly in four divided doses, with reduction to 40 mg. as a maintenance dose or as a single daily intramuscular dose if the long-acting gel is employed. Hyperadrenalism and the possibility of toxic reactions such as psychoses, perforated abdominal viscera, or flaring up of latent or new infection without pronounced signs should be watched for. Sodium restriction and the administration of small amounts of potassium chloride should usually accompany hormone administration. When hormone therapy is discontinued for any reason, a rebound of rheumatic activity may occur. The impact of the rebound may be reduced somewhat by the continued administration of salicylates during and after hormone administration. Whatever agent or agents are employed, it is evident from various studies that early therapy and long-continued therapy with salicylates are desirable.

The treatment of rheumatic fever associated with cardiac failure can be mentioned only briefly here. There appears to be no reason to withhold digitalis from such patients, but over-digitalization simply to achieve a digitalis effect should be avoided. Bed rest, salt restriction, mercurial diuretics, and other indicated procedures are instituted in conjunction with the antirheumatic drugs. Corticotropin or cortisone may accentuate the degree of salt and water retention and further embarrass the heart. After a long period of apparently inactive rheumatic fever, cardiac surgery for late valvular deformities may be considered after careful evaluation of the patient's disability, the type of valve lesion, and the operative risk and current follow-up experience.

Prevention.—Perhaps the greatest contribution to the control of rheumatic fever has been the appreciation of the role of hemolytic streptococcic infections in the initiation of the disease. Recurrent attacks of rheumatic fever may be prevented by avoiding Streptococcus infections with the administration of 0.5 to 1.0 gm. of sulfadiazine daily throughout the year. It is strongly urged that this regimen be instituted for all known rheumatic subjects under the age of 18 and for adults with rheumatic fever for at least five years after their last attack. Toxic reactions are rare and usually occur in the first two months, during which weekly determinations of the hemoglobin and the total and differential leukocyte counts are advisable. Persons in whom rash, leukopenia, or other manifestations of sensitivity to sulfadiazine develop may be given penicillin orally, 200,000 units twice daily on an empty stomach, i. e., about one hour before a meal or at bedtime. It should be emphasized that prophylaxis must begin as soon as the diagnosis has been made.

The early and adequate treatment of upper respiratory tract infection of streptococcic origin almost eliminates the possibility of a rheumatic attack. The regimen recommended by the American Council on Rheumatic Fever, based largely on experience at the Fort Warren Air Force Base in Wyoming, is one intramuscular injection of 600,000 units of procaine penicillin in aluminum monostearate every third day for three doses. In children, the dosage may be reduced to 300,000 units, but optimal results may be expected if the number of doses and the time interval are not altered, despite rapid clinical improvement of the pharyngitis. Further details may be found in the report of the Council.

In patients with rheumatic valvular disease, dental extraction and surgical procedures should be preceded and followed by several days of intramuscular penicillin therapy or administration of other antimicrobial agents in substantial doses to decrease the possibility of subacute bacterial endocarditis.

Prognosis.—The prognosis of rheumatic fever is extremely variable, largely depending on the degree of cardiac embarrassment, which in turn is related to the number or severity of attacks. The mere presence of a rheumatic heart murmur does not in itself warrant severe restriction of physical activity, school work, or childbearing under adequate supervision. Cardiac enlargement, congestive heart failure, or auricular fibrillation carry a poor prognosis. Prophylaxis or early treatment of streptococcic infections and, to a lesser degree, adequate treatment of recurrent attacks or cardiac surgery may appreciably alter the outlook of the severely affected rheumatic subject.

(To Be Continued)

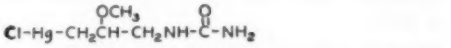
COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Chlormerodrin.—Neohydrin (Lakeside).—$C_5H_{11}ClHgN_2O_2$.—M. W. 367.22.—[3-(Chloromercuri)-2-methoxypropyl]urea.—The structural formula of chlormerodrin may be represented as follows:



Actions and Uses.—Chlormerodrin is a mercurial diuretic compound chemically related to meralluride. It is more effective orally than previously introduced mercurial diuretics that can be administered by this route. It is thus useful for oral mercurial diuretic therapy in the management of recurring cardiac and nephrotic edema, ascites of liver disease, and in carefully selected cases of subacute and chronic nephritis. Chlormerodrin may supplant the need for injection therapy in some patients, but in others parenteral treatment may be required to replace or supplement oral medication.

Dosage.—Chlormerodrin is administered orally. The average daily dose for adults ranges from 18.3 mg. (equivalent to 10 mg. of mercury) to 73.2 mg. (40 mg. of mercury), depending upon the severity of edema or circulatory failure. The dosage for children is adjusted in proportion to body weight. Reduction of dosage or withdrawal of medication may be necessary to eliminate side-effects.

Tests and Standards.—

Physical Properties: Chlormerodrin is a white, odorless powder with a bitter, metallic taste, m.p. 145.0-155.0°. It is very soluble in sodium hydroxide T.S. and very slightly soluble in chloroform. The amounts which dissolve in the following solvents to form 100 ml. of solution are: 0.56 gm. in alcohol, 1.1 gm. in methyl alcohol, and 1.1 gm. in water. Chlormerodrin is stable to light and air. The pH of a 0.5% solution is 4.3-5.0.

Identity Tests: Dip a clean copper wire in a paste made by mixing about 50 mg. of chlormerodrin with a few drops of water and hold it in the nonluminous portion of the flame of a Bunsen burner: the flame turns green *(presence of chlorine).*

Dissolve about 50 mg. of chlormerodrin in 10 ml. of diluted nitric acid and pass hydrogen sulfide into the solution: a black precipitate forms *(presence of mercury).*

Purity Tests: Dissolve about 0.5 gm. of chlormerodrin in 20 ml. of 0.1 *N* sodium hydroxide. Filter and add 4 drops of sodium sulfide T.S.: no precipitate or color is produced immediately *(absence of ionizable mercury and other heavy metals).*

Dry about 1 gm. of chlormerodrin, accurately weighed, at 105° for 5 hours: the loss in weight does not exceed 1.0%.

Char about 1 gm. of chlormerodrin, accurately weighed, cool the residue, add 1 ml. of sulfuric acid, heat cautiously until evolution of sulfur trioxide ceases, ignite, cool, and weigh: the residue does not exceed 0.3%.

Assay: (Mercury) Transfer to a 400 ml. beaker about 0.4 gm. of chlormerodrin, accurately weighed. Add 5 ml. of hydrochloric acid and 150 ml. of water, heat on a steam bath for about 5 min., and, while the solution is still on the steam bath, pass hydrogen sulfide into the solution for 5 min. Suction filter the precipitate of mercuric sulfide through a tared sintered glass crucible, removing any precipitate which adheres to the beaker with three 5 ml. portions of water. Wash the precipitate successively with water, alcohol, carbon disulfide, alcohol, and ether. Dry the precipitate at 105° for 2 hours and weigh. Each gram of mercuric sulfide formed is equivalent to 0.8622 gm. of mercury and 1.578 gm. of chlormerodrin. The amount of mercury is not less than 53.5 nor more than 55.7%, equivalent to not less than 98.0 nor more than 102.0% of chlormerodrin.

Dosage Forms of Chlormerodrin

TABLETS. *Identity Tests:* Grind a number of tablets equivalent to about 0.8 gm. of chlormerodrin. The powder responds to the identity tests for the active ingredient in the monograph for chlormerodrin.

Assay: (Mercury) Weigh 75 tablets and powder them. Transfer to a 250 ml. beaker an amount of powder, accurately weighed, equivalent to about 0.46 gm. of chlormerodrin. Heat it on a steam bath for 30 min. with 10 ml. of hydrochloric acid and 40 ml. of water. Transfer the mixture to a 250 ml. volumetric flask, cool, fill to the mark with water, mix, and filter. Transfer to a 400 ml. beaker a volume of filtrate, accurately measured, equivalent to 0.2 gm. of chlormerodrin. Proceed as directed in the assay for mercury in the monograph for chlormerodrin starting with, ". . . and pass hydrogen sulfide into the solution for 5 min. . . ." The amount of chlormerodrin is not less than 90.0 nor more than 110.0% of the labeled amount.

Lakeside Laboratories, Inc., Milwaukee, Wis.

Tablets Neohydrin: Each tablet contains 18.3 mg. of chlormerodrin (equivalent to 10 mg. of mercury).

Acet-Dia-Mer-Sulfonamides (See New and Nonofficial Remedies 1952, p. 100).

The Bowman Bros. Drug Company, Canton, Ohio.

Hexad Tablets Cetazine: 0.25 gm. Each tablet contains 83 mg. each of sulfacetamide, sulfadiazine, and sulfamerazine.

Ascorbic Acid-U.S.P. (See New and Nonofficial Remedies 1952, p. 445).

Sherman Laboratories, Detroit, Mich.

Tablets Ascorbic Acid: 100 mg.

Aureomycin Hydrochloride-U.S.P. (See New and Nonofficial Remedies 1952, p. 117).

Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.

Ointment Aureomycin Hydrochloride (Ophthalmic) 1%: 3.5 gm. tubes. An ointment containing 10 mg. of aureomycin hydrochloride in each gram.

Powder Aureomycin Hydrochloride (Intravenous): 10 and 50 cc. vials. A powder containing 0.1 and 0.5 gm., respectively, of aureomycin hydrochloride. Buffered with sodium glycinate.

Spersoids Aureomycin Hydrochloride: 36 and 75 gm. bottles. A flavored powder containing 16.7 mg. of aureomycin hydrochloride in each gram.

Soluble Tablets Aureomycin Hydrochloride: 50 mg.

Bacitracin (See New and Nonofficial Remedies 1952, p. 41).

Chas. Pfizer & Company, Inc., Brooklyn.

Bacitracin (Topical): 50,000 unit vials.

Diphtheria and Tetanus Toxoids, Alum Precipitated-U.S.P. (See New and Nonofficial Remedies 1952, p. 388).

Eli Lilly & Company, Indianapolis.

Combined Diphtheria-Tetanus Toxoids (Alum Precipitated): 1 cc. vial (one immunization) and 5 cc. vial (five immunizations). Preserved with thimerosal 1:10,000.

Diphtheria Toxoid, Alum Precipitated-U.S.P. (See New and Nonofficial Remedies 1952, p. 384).

Sharp & Dohme, Inc., Philadelphia.

Diphtheria Toxoid (Purified, Alum Precipitated): 1 cc. vials (one 2 dose immunization) and 5 cc. vials (five 2 dose immunizations).

Estradiol-U.S.P. (See New and Nonofficial Remedies 1952, p. 330).

Chicago Pharmacal Company, Chicago.

Solution Estradiol in Oil: 10 cc. vial. A solution in sesame oil containing 0.28 mg. of estradiol in each cubic centimeter. Preserved with 0.5% benzyl alcohol.

Suspension Estradiol with Benzyl Alcohol 4%: 1 cc. ampul. A microsuspension containing 0.14 mg. of estradiol in each cubic centimeter. 1 cc. ampul and 10 cc. vial. A microsuspension containing 0.28 mg. of estradiol in each cubic centimeter.

Estrone-U.S.P. (See New and Nonofficial Remedies 1952, p. 332).

G. W. Carnrick Company, Newark, N. J.

Solution Thelestrin in Oil: 1 cc. ampuls and 10 cc. vials. A solution in sesame oil containing 1 mg. of estrone in each cubic centimeter. The 10 cc. vial is preserved with 0.5% chlorobutanol.

Aqueous Suspension Thelestrin: 10 cc. vials. A suspension containing 1 mg. of estrone in each cubic centimeter. 1 cc. ampuls and 10 cc. vials. A suspension containing 2 mg. of estrone in each cubic centimeter. 10 cc. vials. A suspension containing 5 mg. of estrone in each cubic centimeter. The 10 cc. vials are preserved with thimerosal 1:10,000.

Hexachlorophene (See New and Nonofficial Remedies 1952, p. 51).

Winthrop-Stearns Inc., New York.

pHisoHex: 148 cc. squeeze bottle. A detergent lotion containing 3% hexachlorophene.

Hyaluronidase (See New and Nonofficial Remedies 1952, p. 438).

Abbott Laboratories, North Chicago, Ill.

Hyazyme: Vials containing 150 turbidity reducing units of powdered hyaluronidase. U. S. trademark 564,637.

Isoniazid (See THE JOURNAL, Feb. 28, 1953, p. 740).

Endo Products, Inc., Richmond Hill, N. Y.

Tablets Niadrin: 50 mg. and 0.1 gm. U. S. trademark 398,543.

Keith-Victor Pharmacal Company, St. Louis.

Tablets Zinadon: 50 and 100 mg.

Mephenesin (See New and Nonofficial Remedies 1952, p. 432).

Victor M. Hermelin & Company, Division of Keith-Victor Pharmacal Company, St. Louis.

Tablets Mephenesin: 0.5 gm.

E. S. Miller Laboratories, Inc., Los Angeles.

Elixir Tolulexin: 273 cc. and 3.78 liter bottles. A 5% alcohol, 40% propylene glycol solution containing 0.2 gm. of mephenesin in each cubic centimeter.

Mercumatilin Sodium (See New and Nonofficial Remedies 1952, p. 290).

Endo Products, Inc., Richmond Hill, N. Y.

Solution Cumertilin Sodium with Benzyl Alcohol 2%: 10 cc. vials. An aqueous solution containing 0.132 gm. of mercumatilin sodium (equivalent to 39 mg. of mercury) and 11 mg. of excess theophylline in each cubic centimeter.

Methoxyphenamine Hydrochloride (See New and Nonofficial Remedies 1952, p. 187).

The Upjohn Company, Kalamazoo, Mich.

Syrup Orthoxine Hydrochloride: 473 cc. bottles. A flavored syrup containing 10 mg. of methoxyphenamine hydrochloride in each cubic centimeter. Preserved with 0.1% methylparaben.

Mucin—Aluminum-Hydroxide—Magnesium-Trisilicate (See New and Nonofficial Remedies 1952, p. 311).

The Harrower Laboratory, Inc., St. Louis.

Liquid Mucotin: 355 cc. bottles. A flavored suspension containing 40 mg. of gastric mucin, 62 mg. of aluminum hydroxide gel, and 0.11 gm. of magnesium trisilicate in each cubic centimeter.

Pertussis Vaccine-U.S.P. (See New and Nonofficial Remedies 1952, p. 392).

U. S. Standard Products Company, Woodworth, Wis.

Pertussis Vaccine: 7.5 cc. (5 immunizations) and 22.5 cc. vials (15 immunizations). 60,000 million H. pertussis in each cubic centimeter. Preserved with thimerosal 1:10,000.

Polymyxin B Sulfate (See THE JOURNAL, Nov. 22, 1952, p. 1219).

Chas. Pfizer & Company, Inc., Brooklyn.

Ointment Polymyxin B Sulfate: 14.2 gm. tubes. An ointment containing 20,000 units of polymyxin B as the sulfate in each gram.

Ophthalmic Ointment Polymyxin B Sulfate: 3.5 gm. tubes. An ointment containing 20,000 units of polymyxin B as the sulfate in each gram.

Oxytetracycline (See THE JOURNAL, April 11, 1953, p. 1291).

Chas. Pfizer & Company, Inc., Brooklyn.

Oral Suspension Terramycin: 1.5 gm. vials. A powder with added flavoring for suspension in distilled water to give a solution containing 50 mg. of oxytetracycline in each cubic centimeter.

Penicillin for Injection for Prolonged Action (See New and Nonofficial Remedies 1952, p. 126).

Chas. Pfizer & Company, Inc., Brooklyn.

Aqueous Suspension Procaine Penicillin G with Procaine Hydrochloride 2%: 1 cc. Steraject cartridges, 600,000 units in each cubic centimeter. Preserved with 0.12% methylparaben and 0.013% propylparaben. Buffered with sodium citrate.

Procaine Penicillin G for Aqueous Injection: Vials of 300,000, 1,500,000, and 3,000,000 units. Buffered with 3.8% sodium citrate.

Tetanus Toxoid, Alum Precipitated-U.S.P. (See New and Nonofficial Remedies 1952, p. 386).

Eli Lilly & Company, Indianapolis.

Tetanus Toxoid (Alum Precipitated): 1 cc. (one immunization) and 5 cc. vials (five immunizations). Preserved with thimerosal 1:10,000.

Tetanus Toxoid-U.S.P. (See New and Nonofficial Remedies 1952, p. 386).

Eli Lilly & Company, Indianapolis.

Tetanus Toxoid: 1.5 cc. (one immunization) and 7.5 cc. vials (five immunizations). Preserved with thimerosal 1:10,000.

Thiamylal Sodium (See New and Nonofficial Remedies 1952, p. 245).

Parke, Davis & Company, Detroit.

Powder Surital Sodium: 0.5 and 1 gm. ampuls packaged with diluent. 5 gm. ampuls packaged without diluent.

Tubocurarine Chloride-U.S.P. (See New and Nonofficial Remedies 1952, p. 430).

E. R. Squibb & Sons, Division of Mathieson Chemical Corporation, New York.

Solution Tubocurarine Chloride (High Potency): 10 cc. vials. A solution containing 15 mg. (100 units) of tubocurarine chloride in each cubic centimeter. Preserved with 0.9% benzyl alcohol and stabilized with 0.1% sodium bisulfite.

Vitamin B_{12}-U.S.P. (See New and Nonofficial Remedies 1952, p. 470).

Raymer Pharmacal Company, Philadelphia.

Solution Crystalline Vitamin B_{12}: 10 cc. vials. A saline solution containing 30 or 50 μg of vitamin B_{12} in each cubic centimeter. Preserved with 0.5% phenol.

The Vitarine Company, Inc., New York.

Solution Crystalline Vitamin B_{12}: 10 cc. vials. A saline solution containing 30 or 50 μg of vitamin B_{12} in each cubic centimeter. Preserved with 0.5% chlorobutanol.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

APPARATUS ACCEPTED

The following additional product has been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

RALPH E. DE FOREST, M.D., *Secretary.*

Tomac Iceless Oxygenaire, Model E

American Hospital Supply Corporation, 2020 Ridge Ave., Evanston, Ill.

The Tomac Iceless Oxygenaire, Model E, is an apparatus for administering oxygen to a patient in bed. It consists of two principal parts, a tent or canopy of transparent material supported over the bed and a cabinet housing the electrically driven machinery for circulating and cooling the oxygen. Oxygen is supplied from a tank of the compressed gas, and electric supply is alternating current at 60-cycles and 115 volts.

Tomac Iceless Oxygenaire, Model E.

The cabinet is provided with casters so that it can be moved about on the floor. The entire apparatus unpacked weighs 104 kg. (230 lb.). Packed for shipment it weighs 129 kg. (285 lb.) and makes a crate measuring 134 by 60 by 65 cm. (56¾ by 23¾ by 25½ in.). The shipping weight includes the following accessories: Tomac oxygen regulator, oxygen tent call button, disposable canopy, and oxygen tank wrench. Evidence of satisfactory construction and performance was obtained from a laboratory acceptable to the Council.

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ROENTGEN-RAY CATARACT

Occurrence of cataract following exposure of the lens to ionizing radiations has been demonstrated both in man and in experimental animals. The degree of cataract formation depends on the quality of the radiation, on the total number of roentgen units given, and on the interval of time during which the exposure is made. Thus, a specific amount of the longer roentgen rays administered in a single dose is more likely to produce cataract than the same dosage of short rays given in divided doses over a period of several days or weeks. In addition, the cataractous reaction in the lens, which becomes visible only after a variable latent period, is also dependent on the species and the age of the animal exposed to radiation. Taken together, these factors have resulted in considerable confusion concerning the ultimate occurrence of cataract, its relationship to radiation, and the fundamental cause of lens opacification. Most observers believe the changes in the lens are due to alteration in the chemical, enzymatic, physical, and cellular processes as a direct result of radiation; others maintain that the lens damage is indirect and is caused by impaired nutrition resulting from injury to the blood vessels of the ciliary body.

To test the validity of these hypotheses, Alter and Leinfelder [1] devised a series of experiments so that either the ciliary body or the lens could be selectively subjected to a cataractogenic dose of roentgen rays. Five lead shields 2 mm. in thickness were used, each one designed to protect from direct radiation certain portions of the lens of the eye of young albino rabbits, and, in addition, to exclude other structures as far as possible. The experiments demonstrated that no cataract occurs when the lens is protected from radiation, even though the ciliary body receives a dose sufficient to produce cataractous changes. Moreover, it was shown that the actively growing equatorial portion of the lens appears to be most sensitive to injury by roentgen rays, while the pupillary zone of the lens appears to be least sensitive. Exposure of one quadrant of the lens to roentgen rays produced opacities limited to that particular quadrant. In most instances the lead shields did not protect the opposite eye, and cataract occurred because of direct injury produced by radiation. The occurrence of cataract in the opposite eye thus acted as a positive control of the cataractogenic character of the radiation used.

1. Alter, A. J., and Leinfelder, P. J.: Roentgen-Ray Cataract: Effects of Shielding of the Lens and Ciliary Body, A. M. A. Arch. Oph. **49**: 257 (March) 1953.

EFFECT OF VITAMIN C DEFICIENCY ON HEALED WOUNDS

Ascorbic acid deficiency inhibits normal wound healing, and according to recent evidence it may also cause degenerative changes in previously healed wounds. In Anson's voyage in 1769 it was recorded that "the scars of wounds which had been for many years healed were forced open by this virulent distemper" [scurvy]. Experimental evidence in support of this presumptive susceptibility of scar tissue to vitamin C deficiency has been reported by Pirani and Levenson [1] of the U. S. Army Medical Nutrition Laboratory, Chicago. These researchers selected for their experiments young adult male guinea pigs weighing on an average 450 gm. These animals had been reared on a diet containing adequate amounts of ascorbic acid. A linear midline laparotomy incision 4 cm. in length was performed on each animal, and the wounds were allowed to heal for six weeks. At the end of this time half of the animals were placed on a diet free of vitamin C, the other half being given a nutritionally complete diet to serve as controls.

Signs of scurvy were noted in most of the "deficient" animals after 17 to 18 days. These signs were very pronounced in all "deficient" animals by the 26th day. At this time considerable swelling, herniation, and hemorrhage were noted in the laparotomy scars of the "deficient" animals. There were no similar changes in the laparotomy scars in the controls. All animals were then killed for histological study. In the scorbutic guinea pigs the epidermis of the laparotomy wounds appeared normal, but the underlying connective tissue showed marked degenerative lesions. The surrounding connective tissues were normal. The degenerative changes consisted of fibroblastic proliferation, regression of connective tissue elements, and hemorrhage.

This study indicates that adequate ascorbic acid intake is essential not only for normal healing in the period immediately following trauma but also for the maintenance of previously formed scar tissue. Scar tissue is thus apparently more susceptible at least in animals to vitamin C deficiency than is normal tissue.

1. Pirani, C. L., and Levenson, S. M.: Effect of Vitamin C Deficiency on Healed Wounds, Proc. Soc. Exper. Biol. & Med. **82**: 95 (Jan.) 1953.

HYPERCHLOREMIC ACIDOSIS FOLLOWING URETEROSIGMOIDOSTOMY

The transplantation of the ureters into the bowel as a method of diverting urine from the bladder is one of the important and practical surgical procedures used in the treatment of patients with exstrophy or malignant disease of the bladder. One of the complications that may arise after successful surgical intervention is that intermittent episodes of nausea, anorexia, or nitrogen retention may develop, and the patient may complain of

a metallic taste in the mouth. It is now believed that these events are associated with an electrolyte imbalance best described as hyperchloremic acidosis.

Recently, Mitchell and Valk [1] investigated the problem of hyperchloremic acidosis in this type of patient. With the emptying of the urine into the rectosigmoid, the sodium chloride and ammonium chloride present are reabsorbed in varying amounts, depending on the concentration of chloride in both the urine and the plasma. The ratio of sodium to chloride in the plasma, on a molar basis, is approximately 1:0.7, and the same ratio in sodium chloride is 1:1. Thus, if 100 mEq. of sodium chloride is reabsorbed from the rectosigmoid, approximately 30 mEq. of chloride is added to the plasma in excess of cations present. Also, when the ammonium chloride is reabsorbed, the ammonium ion is converted to urea by the liver, again leaving an excess of chloride ion. The latter replaces the bicarbonate radical, which in turn is converted to carbon dioxide and water, with the former being excreted by the lungs. Thus, in this acidotic state there may be no true loss of sodium and potassium but rather a loss of bicarbonate and a replacement of it by chloride. With the loss of the bicarbonate ion there is a decrease in the pH of the blood. Also the decreased amounts of bicarbonate ion reaching the kidney tubules stimulates this organ to produce more ammonia and a further cycle of acidosis is again induced.

Patients with ureterosigmoid transplants were studied for 24-hour periods during both the phase of hyperchloremic acidosis and after the correction of this imbalance, by collecting urine on consecutive days, first with an indwelling catheter and then from intermittent voiding. In the five subjects so studied, the amount of ammonia, chloride, and sodium found in the catheterized specimen was greater than that present in the pan-voided samples. This was interpreted as indicating that the patients were reabsorbing the electrolytes from the colon. To decrease the tendency to hyperchloremic acidosis, Mitchell and Valk suggest that the fluid intake should be high to keep the electrolyte concentration in the rectal urine low and thus decrease its rate of reabsorption. In addition, the bowel should be emptied every hour or hour and a half to reduce the time that the chloride ion is allowed in contact with the absorbing surface. Thus, by preventing the reabsorption of the chloride ion the acidosis can be averted. They also suggest that sodium bicarbonate be given daily to these subjects. These investigators state that hyperchloremic acidosis can develop in the presence of good renal function. The reabsorption of ammonia and not urea was held responsible for the increased blood urea nitrogen, which may occur in these patients, though urea is also reabsorbed. It should be noted that while the blood nonprotein nitrogen may increase threefold there is usually no increase in the creatinine level of the blood. Should both the nonprotein nitrogen and creatinine levels increase, then the presence of renal failure should be considered.

Lapides [2] has also investigated the mechanism of the electrolyte imbalance following ureterosigmoidostomy and concludes that the derangement of electrolytes is caused by a dual mechanism. The determinative factor was thought to be renal tubular damage, with the intestinal absorption of the urinary constituents playing a secondary role. Lapides believes that without renal tubular damage there can be no hyperchloremic acidosis in this type of patient. In a follow-up study of 22 patients who had undergone ureterosigmoid transplants earlier, 23% had an electrolyte balance, normal excretory pyelograms, and no episodes of pyelonephritis. The remaining 77% had a history of electrolyte imbalance and recurrent attacks of pyelonephritis associated with abnormal excretory pyelograms. The electrolyte imbalance occurring most frequently was hyperchloremic acidosis.

In another series of studies, six patients who did not have ureterosigmoidostomy were selected on the basis of renal function. Three had good renal function as measured by urea clearance and phenolsulfonphthalein excretion, and the remainder showed signs of poor kidney activity. By giving the patients continuous slow enemas of urine that had been previously removed from their bladder by catheterization, it was thus believed possible to duplicate the conditions in the colon that occurred in patients with ureterosigmoid transplants. This procedure was carried out for a period of three to eight days. It was noted that the electrolyte pattern in patients with good kidney function was not altered by the continuous instillation of urine into the colon, while those with poor renal function had a lowering of the bicarbonate level of the blood, with increasing levels of chloride and nonprotein nitrogen. In the latter patients, hyperchloremic acidosis developed. It was concluded that for hyperchloremic acidosis to develop in patients with ureterosigmoidostomy, in addition to the absorption of urinary constituents from the colon, there must be decreased kidney function.

While there appears to be a lack of unanimity of opinion as to the mechanism of the production of the hyperchloremic acidosis in patients with ureterosigmoidostomy, there is agreement on the method of treatment once the hyperchloremic acidosis occurs. In all probability, the difference in concept regarding the mechanism of this electrolyte imbalance is due to the fact that the same general phenomena are observed from different points of view and with varied techniques. With increasing knowledge of both kidney function and the transfer of ions across the intestinal membranes, it should be possible to obtain a more accurate picture of the mechanism involved in this electrolyte abnormality.

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1. Mitchell, A. D., and Valk, W. L.: Hyperchloremic Acidosis of Ureterosigmoidostomies, J. Urol. **69**: 82-95, 1953.

2. Lapides, J.: The Mechanism of Electrolyte Imbalance Following Ureterosigmoid Transplantation, Surg., Gynec. & Obst. **93**: 691-704, 1951.

ORGANIZATION SECTION

HOTEL RESERVATIONS FOR NEW YORK MEETING

All physicians who are planning to attend the annual meeting of the American Medical Association in New York City, June 1-5, are urged to make their hotel reservations as soon as possible before all the desirable rooms have been taken. Write direct to Dr. Edward P. Flood, Chairman, American Medical Association, Subcommittee on Hotels, 500 Park Avenue, New York 22, New York.

FEDERAL MEDICAL LEGISLATION

Medical Expense Deductions

Congressman Kersten (R., Wis.) would amend the Internal Revenue Code by H. R. 5022 to authorize the deduction of medical expense in excess of 2% of adjusted gross income instead of the present 5%. He would also permit the deduction of total costs of voluntary health insurance coverage, including "group hospitalization or other group medical care." Congressman Curtis (R., Mo.) in H. R. 4981 proposes to amend the Internal Revenue Code to allow a $1,250 exemption for the taxpayer and for each dependent without the present maximum allowance of $2,500 for an individual taxpayer with dependents and the $5,000 limitation in the case of a husband and wife filing a joint return. Both measures were referred to the Ways and Means Committee.

Limitation of Service Under Doctor Draft

Senators Flanders (R., Vt.) and Kennedy (D., Mass.) in an amendment to S. 1531 propose for priority 2 physicians and dentists that "the period of active duty that any such person may be required to perform shall not exceed (A) twenty-four months if he has had less than six months of active service . . . (B) twenty-one months if he has had at least six but less than nine months of such service, (C) eighteen months if he has had at least nine but less than twelve months of such service, (D) fifteen months if he has had at least twelve but less than fifteen months of such service, (E) twelve months if he has had at least fifteen but less than eighteen months of such service, or (F) nine months if he has had eighteen or more months of such service, since September 16, 1940, but prior to the date of his order to active duty under this subsection." The amendment was referred to the Armed Services Committee.

Appointment of Osteopaths in the Medical Corps

Congressman Short (R., Mo.) in H. R. 5017 would amend the present law to permit the appointment of osteopaths as medical officers in the Army and Navy. To be eligible for appointment, a doctor of osteopathy would have to be "a graduate of a college of osteopathy whose graduates are eligible for licensure to practice medicine or surgery in a majority of the States, and be licensed to practice medicine, surgery or osteopathy in one of the States or Territories of the United States or in the District of Columbia." The measure was referred to the Committee on Armed Services.

Tuberculosis and Multiple Sclerosis in Veterans

The present law provides "that active pulmonary tuberculosis manifesting a 10 percentum degree of disability or more within three years from the date of separation from active service, or multiple sclerosis manifesting a 10 percentum degree of disability or more within two years from the date of separation from active service, *shall* in the absence of affirmative evidence to the contrary be deemed to have been incurred in or aggravated by active service." Congressman McCarthy (D., Minn.) in H. R. 5012 would substitute for the words following *"shall"* these words: "be conclusively presumed to have been incurred in or aggravated by active service." The amendment was referred to the Committee on Veterans' Affairs.

STATE MEDICAL LEGISLATION

California

Bills Enacted.—A. 968, has become ch. 434 of the laws of 1953. It makes it unlawful to possess an opium pipe or any device, contrivance, instrument, or **paraphernalia used for unlawfully injecting or smoking a narcotic.** A. 1376, has become ch. 557 of the laws of 1953. It amends the law relating to the practice of the healing art by authorizing a person whose certificate has been revoked or suspended for more than one year to petition the board for **a reinstatement of the certificate** after a period of not less than one year has elapsed from the date of the revocation or suspension. In such instances, the board may require the petitioner to pass an oral examination and the affirmative vote of at least seven-tenths of the members of the board will be necessary to set aside a penalty and restore a certificate.

Connecticut

Bills Introduced.—H. 284, proposes to amend the law relating to the drugs required to be sold on a written prescription by including in the list of such drugs **coumarin, methylparafynol, and thiouracil.** The proposal also required that the prescription be signed by a practitioner licensed by law to prescribe such drugs, rather than by a member of the medical, dental, or veterinary profession as is required by the present law. SJR 38, proposes the creation of a committee to study the question of the **establishment of medical, dental, and veterinary colleges** on a New England regional basis.

Bills Enacted.—S. 369, has become Public Act. No. 129 of the acts of 1953. It authorizes the delivery to the University of Connecticut or the department of medicine of Yale University of bodies of persons dying in public institutions, the burial expenses of which would have to be paid by the public, if the University of Connecticut and Yale University have during the year given notice that such bodies will be needed for anatomical proposes. Such bodies shall not be delivered to the schools if the bodies are claimed by a relative or legal representative of the deceased person within 48 hours after death. S. 371, has become Public Act. No. 102 of the acts of 1953. It provides that within 10 days of the date an **intern, house officer, or resident physician** is appointed or employed by any hospital or institution in the state, the superintendent thereof shall notify the state department of health of the name of such intern, house officer, or resident physician, the name and location of the medical school of which he is a graduate and the year of graduation, and any other information which may be required by the department.

Florida

Bills Introduced.—H. 340 and S. 214, to amend the law relating to the medical examination of school children, propose that any **child shall be exempt from medical or physical examination, or medical or surgical treatment,** upon written request of the parent or guardian of such child who objects to the examination and/or treatment on religious grounds, and provided further that the laws, rules, and regulations relating to contagious or communicable diseases and sanitary matters shall not be violated. S. 14, to amend the law relating to narcotic drugs, proposes to **define narcotic drugs** as including any drug to which the narcotic laws of the United States apply and any drug found by the state board of health to have an addiction-forming or addiction-sustaining quality similar to that of opium. The proposal would also provide that in case of conviction for a second or subsequent offense, imposition of sentence shall not be suspended or deferred, nor shall the person so convicted be placed on probation. S. 213, proposes to require the teaching in the public schools of the **true effects of alcoholic and intoxicating liquors and beverages and narcotics** upon the human body and mind, provided that any child whose parent shall present to the school principal a signed statement that the teaching of disease, its symptoms, development and treatment, and the viewing of pictures or motion pictures of such subjects conflict with the religious teachings of their church shall be exempt from such instruction, and no child so exempt shall be penalized by reason of such exemption. S. 482, proposes a creation of a **Department of Medicolegal Examiners and a Supervisory Medicolegal Commission** which would establish qualifications for appointment to the post of chief medicolegal examiner, assistant medicolegal examiner, state toxicologist, and regional medicolegal examiners. Chief medicolegal examiner would have general superintendence and direction over the several regional and county medicolegal examiners, he shall instruct regional and county medicolegal examiners in the methods of legal medicine and upon request shall aid and assist in the performance of their duties, he shall supervise the medicolegal laboratory, he shall serve as regional medicolegal examiner in the region in which the medicolegal laboratory is located, he shall advise the Attorney General and the state attorneys in medicolegal matters, he shall advise the state public health officer in medicolegal matters in the public interest, he

The summary of federal legislation was prepared by the Washington Office of the American Medical Association and the summary of state legislation by the Bureau of Legal Medicine and Legislation.

shall advise the director of the Florida industrial commission in medicolegal matters in the public interest, and shall make available instruction and teaching materials for students of the law and medical schools of the state, police investigators of the state, state attorneys, and other properly qualified and interested persons satisfactory to the supervisory medicolegal commission.

Illinois

Bills Introduced.—H. 698, proposes to require **drug addicts** to register with the department of public welfare and defines a "drug addict" as a person who repeatedly uses narcotic drugs. The proposal also states that multiple punctures on body surfaces or scars or abrasions resulting from hypodermic needle punctures shall be prima facie evidence of the repeated use of narcotic drugs. S. 412, proposes the enactment of a **general hospital licensing law.** S. 422, proposes certain amendments to the law regulating the practice of chiropody, among which is the **definition of the word "chiropody"** as the diagnosis, medical, physical, or surgical treatment of the ailments of the human foot, with the exception of administration of general anesthetics or amputation of the foot.

Iowa

Bill Enacted.—H. 190, was approved April 22, 1953. It amends the Workmen's Compensation Act by authorizing payment for medical services rendered by **doctors of chiropody** to injured employees.

Kansas

Bill Enacted.—H. 14, was approved April 2, 1953. It provides that in case of the conviction of any person for any offense against public morals and decency, as relating to crimes pertaining to sex, in which perversion or mental aberration appears to be involved, the trial judge may defer sentence until the report of a **medical examination of the defendant** can be secured. The trial judge also shall have power to refer the defendent to a state hospital for such mental examination and report thereof.

Maine

Bills Enacted.—H. 206, was approved April 29, 1953. It declares **alcoholism** to be an acute problem and authorizes the department of health and welfare to take such action as it may deem necessary to assist in bringing about the reduction of alcoholism. H. 334, was approved May 1, 1953. It amends the law relating to the sale of **narcotic drugs** to minors by providing for imprisonment up to 20 years therefore. H. 432, was approved April 27, 1953. It provides for the creation of a **Board of Examiners of Psychologists.** H. 1094, was approved May 1, 1953. It provides that any person who professionally treats a human being for a **wound apparently caused by the discharge of a firearm** shall immediately report the same to the county attorney or sheriff. H. 1111, was approved May 1, 1953. It amends the law relating to **osteopaths** by providing, among other things, that applicants graduating from osteopathic college after Oct. 1, 1953, shall present evidence of having completed an internship in a hospital conforming to the minimum standards for the approval of intern training hospitals of the American Osteopathic Association. The law also provides that in addition to payment of an annual registration fee, each licentiate shall present evidence that he or she had attended in the year preceding at least two days of five hours each of an annual osteopathic educational program devoted to postgraduate instruction and training in osteopathy, surgery and obstetrics approved by the board. S. 250, has become ch. 161 of the public laws. It amends the law relating to the admissibility of **blood tests in evidence** in criminal cases by providing that whenever the expense of such blood tests has been paid for by the county or state, the results of such tests may be admissible in evidence. S. 323, has become ch. 141 of the public laws of 1953. It amends the law relating to the **use of bodies for the promotion of medical education** by authorizing the use of such bodies in any recognized medical school in New England, upon compliance with the act.

Maryland

Bills Enacted.—S. 41, has become ch. 586 of the laws of 1953. It provides that written or telegraphic consent for a doctor of medicine to conduct a **postmortem examination** of the body of a deceased person shall be deemed sufficient when given by whichever one of the following assumes custody of the body for purposes of burial; father, mother, husband, wife, child, guardian, next of kin, or in the absence of any of the foregoing, a person who assumes the duty of legal disposal of the body. S. 221, has become ch. 598 of the laws of 1953. It **defines the term "dangerous drugs"** as including any drug intended for use by man which, because of its toxicity or other potentiality for harmful effect, or the method of its use, or the collateral measures necessary for its use, is not safe for use except under the supervision of a practitioner licensed by law to administer such drugs and provides that such drugs shall be dispensed only upon the written prescription of a practitioner licensed by law to administer such drugs, or upon the oral prescription of such practitioner. S. 222, has become ch. 599 of the laws of 1953. It amends the law relating to the sale of **barbital and other hypnotic drugs** by providing that an oral prescription which is reduced immediately to writing and filed by the pharmacist shall be sufficient.

Massachusetts

Bill Introduced.—H. 2667, proposes to authorize the house committee on ways and means to sit during the recess of the general court to study the subject matter of senate document 665, providing for the establishment of clinics for the **treatment of alcoholics** by the department of public health in the cities of Fitchburg, Pittsfield and Worcester.

Bill Enacted.—S. 233, has become ch. 287 of the laws of 1953. It enlarges the powers of nonprofit hospital service corporations by authorizing them to make **reimbursement for other health services.** The term "other health services" is not defined however.

Minnesota

Bills Enacted.—H.R. 22, was adopted April 21, 1953. It directs the legislative research committee to make a study of the system of the **county coroner system** and report its findings to the 1955 session of the legislature. H. 598, has become ch. 215 of the laws of 1953. It requires every applicant for a **license to drive a school bus** to take a physical examination for the purpose of discovering communicable or mental disease or physical condition of intermittent or continuing nature that might reasonably affect the ability to operate a bus. SCR 33, was adopted April 21, 1953. It directs the legislative research committee to report to the 1955 legislature on the changes in the organization, operation, and management of the **mental health program** during the coming biennium. S. 1084, has become ch. 705 of the laws of 1953. It provides for the appointment of a **consultant on alcoholism** to, among other things, study the problem of alcoholism within the state, including methods and facilities available for the care, custody, detention, treatment, employment, and rehabilitation of persons afflicted with alcoholism. S. 1551, has become ch. 755 of the laws of 1953. It codifies and revises the law relating to workmen's compensation and provides among other things, that an employee may elect to be treated by **Christian Science treatment** in lieu of medical treatment under certain circumstances.

Montana

Bill Enacted.—S. 170, was approved March 6, 1953. It amends the revenue law by authorizing a taxpayer to deduct **expenses paid** during the taxable year not compensated for by insurance or otherwise, **for medical care** of the taxpayer, his wife, or a dependent.

Nebraska

Bill Introduced.—LB 587, to amend the law relating to the **licensing of hospitals,** proposes that any fraternal organization owning and operating a hospital or home may be issued a license upon its written application and agreement to comply with the law's provisions.

Bill Enacted.—LB 200, was approved May 4, 1953. It is a licensing law for the licensing and regulating of **professional nurses.**

New Jersey

Bill Introduced.—A. 249, to amend the law relating to **cruelty to animals,** proposes, among other things, to authorize the recovery of forfeitures against violators by any legally incorporated Humane Society, Animal Rescue League, Animal Protective League, or similar welfare society.

Bill Enacted.—A. 361, was approved April 28, 1953. It provides for the creation of a **New Jersey Neuropsychiatric Institute** and declares it to be the public policy of the state to provide the means and facilities for the study of the causes and to contribute to the knowledge of the control, prevention, and cure of neuropsychiatric disorders.

North Carolina

Bills Enacted.—H. 1159, was ratified April 30, 1953. It amends the law relating to the practice of medicine by authorizing **revocation of a license** to practice of one who is habitually addicted to the use of marijuana, **barbiturates,** demerol, or any other habit-forming drug or derivative of such drug and also of one who has been adjudicated a **mental incompetent** or whose mental condition renders him unable safely to practice medicine. It also authorizes the board of medical examiners to appear in its own name in the superior courts in **an action for injunctive relief** to prevent violation of the act and authorizes such superior courts to grant such injunction regardless of whether criminal prosecution has been or may be instituted as a result of such violations. H. 1185, was ratified April 23, 1953. It provides an appropriation to be used for education as to the **dangers of alcoholic beverages,** and for the prevention of alcoholism and other emotional disorders. S. 86, was ratified April 22, 1953. It amends the uniform narcotic act by **defining the term "narcotic drugs"** as including drugs to which federal narcotic laws apply and drugs found by the state board of health to have an addiction-forming or addiction-sustaining liability similar to morphine or cocaine. It also makes it the duty of **every attending or consulting physician to report** to the state board of health the name of any person under treatment if it appears that such person is an habitual user of any narcotic drugs.

MEDICAL NEWS

CALIFORNIA

Lecture on Cardiac Surgery.—Alpha Eta Chapter of Phi Delta Epsilon Fraternity, University of Southern California, Los Angeles, announces a lecture on "Indications for Cardiac Surgery," May 28, by Dr. Richard J. Bing, professor of experimental medicine, Medical College of Alabama, Birmingham. Physicians and medical students are invited.

Personal.—Dr. Charles M. Conkling, Glendale, has retired from the position of city physician, after 20 years of service. ——Dr. Irving D. Litwack, Long Beach, city health officer, was recently awarded a citizenship medal for outstanding service to the community by Moffatt Post 1392, Veterans of Foreign Wars.——Dr. Robert Wartenberg, clinical professor of neurology, University of California Hospital, San Francisco, and Dr. Tracy J. Putnam, Beverly Hills, have been elected corresponding members of the Rio de Janeiro Society of Neurology.

State Medical Meeting in Los Angeles.—The California Medical Association will hold its annual session at the Biltmore Hotel, Los Angeles, May 24-28, under the presidency of Dr. Lewis A. Alesen, Los Angeles. The first general meeting will be Monday, 1:30 p. m., when the following presentations will be made:

Sarcoidosis, John H. Talbott, Buffalo.
Unilateral Renal Disease and Hypertension, Edgar Burns, New Orleans.
Contribution of the Investigator to the Development of Modern Surgery, John H. Gibbon Jr., Philade'phia.
Growing Problem of Suicide, Richard A. Kern, Philadelphia.

A clinicopathological conference will be held at 3:40 p. m., with Dr. L. Henry Garland, San Francisco, as moderator. The second general meeting, which will be open to the public, will be held at 8 p. m. Tuesday in the Biltmore Bowl. "Blueprint for Freedom" will be presented by Clarence Manion, J.D., South Bend, Ind. On Monday the section on general surgery will present a symposium on nutrition and electrolytes. The section on general medicine will have a round-table discussion Tuesday 11:25 a. m. on gout and arthritis. In a joint meeting of the section on general medicine and the section on radiology Tuesday, 2 p. m., a symposium on diseases of the esophagus will be presented; at the same time the section on anesthesiology will have a panel discussion on intravenous therapy; and the eye, ear, nose, and throat section will hold a symposium on exophthalmos. "What's New in Pediatrics" will be the subject of a panel discussion by the section on pediatrics at this time. On Thursday the section on general medicine will present a symposium on hypotensive drugs at 9:30 a. m., followed by a round-table discussion, with Dr. Talbott as moderator. The sections on public health, general practice, pathology and bacteriology, and pediatrics will hold a joint meeting Thursday, 2 p. m., during which a symposium will be presented on "Problems in Differential Diagnosis of Acute Diseases."

The Woman's Auxiliary will meet May 24-26 at the Biltmore. Wednesday the California Chapter of the American College of Chest Physicians will meet at the Biltmore, the California Heart Association in the auditorium of the Southern California Edison Building, and the Conference of Local Health Officers in the Sunkist Building. The C. M. A. Cancer Commission will hold a preconvention conference at the Biltmore May 23. The dinner meeting of the California Society of Pathologists May 23, 6:30 p. m., at the Hotel Statler, which will honor Dr. Alvin G. Foord, Pasadena, past president of the society, will have as guest speaker Dr. John R. Schenken, professor of pathology, University of Nebraska College of Medicine, Omaha.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

COLORADO

Society News.—Dr. William A. Campbell of Colorado Springs was elected interim treasurer of the Colorado State Medical Society April 16 to serve the unexpired term of Dr. George C. Shivers, who died April 11.

Hospital News.—The new Weld County General Hospital, Greeley, will hold an open meeting May 28. Dr. Franz J. Ingelfinger, Boston, will speak on "Chronic Benign Disorders of the Pancreas" Thursday morning and on "Dietary Measures in the Treatment of Gastrointestinal Disorders" in the afternoon. "Failure of Laparotomy Wound Healing" will be the topic of Dr. Frederic W. Bancroft, New York, on Thursday morning, and in the afternoon he will discuss "When to Operate in Abdominal Emergencies." At 8 p. m. the Colorado Heart Association and the University of Colorado School of Medicine will sponsor a program on "Cardiac Emergencies in the Operating Room."

CONNECTICUT

Society News.—The Connecticut State Medical Society at its annual meeting in Hamden, April 28, installed as president Dr. George H. Gildersleeve, Norwich, whose father, the late Dr. Charles C. Gildersleeve, was president of the society in 1931. Dr. Harold M. Marvin, New Haven, was chosen president-elect.——The second Connecticut Conference of Cardiovascular Diseases at the New Haven Medical Association Building, May 28, will be sponsored by the Connecticut State Department of Health.

DISTRICT OF COLUMBIA

Alumni Reunion in New York.—The class of 1928 of the George Washington University Medical School, Washington, D. C., will hold a 25th anniversary reunion banquet in New York at the Statler Hotel, June 1, 8 p. m., in conjunction with the annual convention of the American Medical Association. Dr. Richard W. Wilkinson, 1408 L St., N.W., Washington 5, D. C., is in charge of reservations for the banquet.

FLORIDA

Death of Stewart Gordon Thompson.—Stewart Gordon Thompson, D.P.H., managing director of the Florida Medical Association and managing editor of its journal, died April 23 in Jacksonville. Dr. Thompson came to the association as business manager in 1926. In 1937 honorary membership in the Pinellas County Medical Society was conferred on him. Before coming to Florida Dr. Thompson was assistant state registrar of the Kansas State Board of Health. From 1918 to 1937 he was director of the Bureau of Vital Statistics of the Florida State Board of Health, from 1918 to 1927 collaborating epidemiologist of the U. S. Public Health Service assigned to duty in Florida, and from 1919 to 1937 a special agent of the U. S. Bureau of the Census. He served as secretary of the Florida Public Health Association from 1930 to 1937 and in 1935 was president of the American Association of Registration Executives.

ILLINOIS

Reporting of Type of Poliomyelitis.—According to Dr. Leonard M. Schuman, of the state department of public health in Springfield, allocations of gamma globulin for prophylactic use in poliomyelitis in emergency and epidemic situations will be made on the basis, in part, of the severity of the outbreak. To qualify for such allocations the state will need current data on the type of poliomyelitis and fatalities therefrom. Physicians are advised that, in cases in which the final type of paralysis is not known at the time of report, provisional diagnoses may

be made and adjustments carried out later in the epidemiological investigations. The type of disease provisionally must be indicated when the morbidity card is submitted. Types should be designated as "paralytic" or "nonparalytic."

Chicago

Meeting on Physical Rehabilitation.—At the meeting of the Chicago Society of Physical Medicine and Rehabilitation, 8 p. m., May 27, at the Nurses' Residence of Mount Sinai Hospital (2730 W. 15th Pl.), Dr. O. Leonard Huddleston, medical director, Kabat-Kaiser Institute, Santa Monica, Calif., will speak on "Principles of Neuromuscular Reeducation." The session will be preceded by dinner, 6:30 p. m., in the hospital ($3 per plate).

University News.—The University of Illinois College of Medicine announces the following appointments: Dr. Lewis C. Hitchner Jr. will serve as clinical assistant professor of anesthesiology. Dr. Grant C. Johnson, who has been serving in the U. S. Army Medical Corps, has been named assistant professor of pathology in the college of medicine and assistant pathologist in the Research and Educational Hospitals. Walter S. Moos, Ph.D., will serve as assistant professor of radiology and radiation physicist. He formerly held a U. S. Public Health Service fellowship at the National Cancer Institute, Bethesda, Md. Dr. Louis Halperin has been named clinical assistant professor of psychiatry.——The University of Chicago announces that Dr. Charlotte G. Babcock, lecturer in psychiatry and nursing education, has accepted a position as professor of psychiatry at Western Psychiatric Institute and Clinic, the University of Pittsburgh School of Medicine, beginning July 1.——Dr. J. Alfred Rider, instructor in medicine, has resigned to become assistant professor of medicine at the University of California Medical School, San Francisco.——Dr. Mary S. Sherman, assistant professor of surgery, has resigned to join the staffs of the Ochsner Clinic and Tulane University of Louisiana School of Medicine, New Orleans.——Dr. Frank W. Newell, ophthalmology associate at Northwestern University Medical School, has been appointed an associate professor of ophthalmology at the University of Chicago. Dr. Newell, who is associate attending ophthalmologist at Wesley Memorial Hospital and St. Francis Hospital, Evanston, served as a consultant in ophthalmology in the Seine Base Section during World War II and since 1947 has been a consultant ophthalmologist to the surgeon general. He is chairman of the midwest section of the Association for Research in Ophthalmology and a councilor of the Chicago Ophthalmological Society.

MISSOURI

Thompson Lecture in St. Joseph.—The Thompson, Brumm & Knepper Clinic, St. Joseph, announces the fourth annual Dr. F. G. Thompson Sr. Lectureship, "Changes in Surgery During the Past Decade," to be delivered by Dr. Robert S. Dinsmore, chief of surgery, Cleveland Clinic, May 28, 8 p. m., in the Clinic Building, 902 Edmond St., St. Joseph.

NEW YORK

Foundation Expands Virus Studies.—To expand its long-established program for the investigation of virus diseases, the Rockefeller Foundation has appropriated $275,000 to be used in 1953 for field stations and for research in the New York laboratories. The present virus studies, the outgrowth of a program started in 1916 to investigate yellow fever, have involved projects in Africa and South America. Investigations are currently under way in Egypt and India, and plans call for the opening of a virus laboratory in Port of Spain, Trinidad.

Alumni Day.—The Syracuse Academy of Medicine has scheduled May 28 as alumni day. Exhibits at the college of medicine, 10 a. m., will be followed by luncheon and a business meeting. The Herman G. Weiskotten Lectureship on "The Growth of Our Knowledge of Metabolism and Biology in Surgery," will be delivered by Dr. Francis D. Moore, Boston, in the afternoon. Cocktails at 5:30 p. m., 10th floor ballroom, Hotel Syracuse, will precede the dinner, at which Alton Blakeslee, science writer for AP, will speak on "Medical News—The Problems of the Doctor and the Press."

Personal.—Dr. Clara H. Pierce, director of child hygiene in the Syracuse Department of Health, has retired after 27 years of service.——Dr. Ralph Friedlander, chief of surgery and of thoracic surgery at the VA Hospital in Brooklyn, has been appointed full-time director of surgery at the Bronx Hospital. Dr. Friedlander served with the U. S. Army Medical Corps, from December, 1942, to July, 1946, as a senior surgeon, with the 16th Evacuation Hospital in the European Theater of Operations and the Regional Hospital, Fort Benning, Ga.——Dr. Robert W. Graves, professor of neurology, Albany Medical College, and neurologist-in-chief to Albany Hospital, has been appointed consultant to the National Institutes of Health at Bethesda, Md., in connection with the Institute of Neurological Diseases and Blindness.——Dr. Leonard Brand, Brooklyn, has been awarded a medal by the Carnegie Hero Fund Commission for heroism when he descended into a water tank at Hot Springs, Ark., to aid a man who had been severely burned in an explosion of gasoline fumes inside the tank.——Dr. R. Plato Schwartz, professor of orthopedic surgery, University of Rochester School of Medicine and Dentistry, has left for Copenhagen, Denmark, where he will serve as Fulbright lecturer at the Society and Home for Cripples.——Dr. Nunzio J. Carrozzo was recently named assistant director of the Bureau of Medical Rehabilitation, New York State Department of Health, Albany. Dr. Carrozzo was formerly affiliated with the U. S. Public Health Service.

New York City

Dr. Baumgartner Resigns from Health Department.—Dr. Leona Baumgartner, assistant commissioner in charge of maternal and child health services, Department of Health, is resigning after 16 years with the department to become executive director of the New York Foundation but will continue to serve, on a volunteer basis, as chairman of the steering committee of the Interdepartmental Health Council. At the invitation of the French Ministry of Health, Dr. Baumgartner served in France during 1945 as an advisor on maternal and child health. She has been on the pediatric staff of the New York Hospital and assistant professor of pediatrics, public health, and preventive medicine at Cornell University Medical College in New York City. Dr. Harold Jacobziner, director of the department's Bureau of Child Health, will be named assistant commissioner when Dr. Baumgartner leaves.

Tuberculosis Program.—A coordinated attack on tuberculosis, built around a program of large scale ambulatory and home treatment, will be undertaken by the departments of health, hospitals, and welfare. According to the Interdepartmental Health Council, City of New York, of which Dr. Marcus D. Kogel is chairman, the ambulatory treatment program will make extensive use of isoniazid. The program will be focused on three categories of tuberculosis victims: (1) those who are awaiting admission to hospitals, (2) those who have been hospitalized and discharged to clinics for continued treatment, and (3) those, mostly older persons, who refuse prolonged or indefinite hospitalization. The program will be headed by Dr. Arthur B. Robins, director of the Bureau of Tuberculosis of the Department of Health, who will also serve as director of tuberculosis for the department of hospitals, in order to assure maximal coordination between the tuberculosis services of the departments.

OHIO

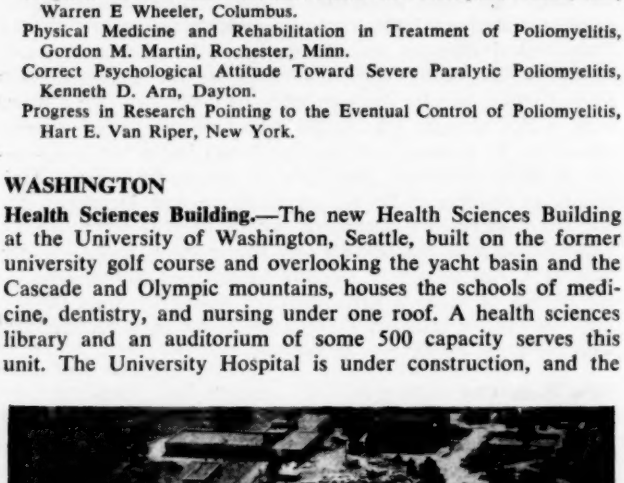
Two Million Bequest to Western Reserve.—More than 2 million dollars will accrue to Western Reserve University School of Medicine, Cleveland, from a bequest in the will of Mrs. Gertrude Chandler Tucker. The net income of the Gertrude Chandler Tucker Memorial Fund is to be used for the following purposes: (1) to discover the nature and causes of children's diseases and to develop techniques for their prevention and treatment; (2) to employ personnel and provide facilities and equipment for the research; (3) to publish the results of the research. The University Board of Trustees are empowered, however, to use the fund for study in other medical and surgical fields if they so choose.

Symposium on Poliomyelitis.—On May 26, 1:30 p. m., the Miami Valley Hospital, Dayton, will present a symposium on poliomyelitis, sponsored by the Miami School of Nursing in cooperation with the Montgomery County Chapter, American Red Cross, and the National Foundation for Infantile Paralysis. Dr. Herman J. Bearzy, director of the department of physical medicine and rehabilitation, Miami Valley Hospital, will serve as moderator. On May 27 the department will sponsor the following symposium on poliomyelitis in the Biltmore Hotel, preceded by luncheon at 12:15 p. m.:

Diagnosis and Treatment of Acute Bulbar and Bulbospinal Poliomyelitis, Warren E Wheeler, Columbus.
Physical Medicine and Rehabilitation in Treatment of Poliomyelitis, Gordon M. Martin, Rochester, Minn.
Correct Psychological Attitude Toward Severe Paralytic Poliomyelitis, Kenneth D. Arn, Dayton.
Progress in Research Pointing to the Eventual Control of Poliomyelitis, Hart E. Van Riper, New York.

WASHINGTON

Health Sciences Building.—The new Health Sciences Building at the University of Washington, Seattle, built on the former university golf course and overlooking the yacht basin and the Cascade and Olympic mountains, houses the schools of medicine, dentistry, and nursing under one roof. A health sciences library and an auditorium of some 500 capacity serves this unit. The University Hospital is under construction, and the



Recently completed Health Sciences Building at University of Washington.

School of Pharmacy will complete this integrated Health Sciences facility and program, which, it is anticipated, will eventually become the health center in all phases for the state.

WEST VIRGINIA

Physicians in State Service.—Gov. William C. Marland has announced the appointment or reappointment of the following physicians: WVU Board of Governors, Thomas L. Harris, Parkersburg; superintendent of Weston State Hospital, H. Sinclair Tait, Weston, who has been serving as acting superintendent of the institution since Dr. Joseph L. Knapp resigned to engage in the practice of psychiatry in Dallas, Texas; superintendent of Spencer State Hospital, Isaac C. East, Spencer; superintendent of Barboursville unit of Huntington State Hospital, Weaver B. Rogers, Barboursville; superintendent of Denmar Sanitarium, Robert G. Warren, Williamson; member, state board of health, Delivan A. MacGregor, Wheeling; member, advisory board to state board of health, Hu C. Myers, Philippi; members, medical licensing board, George F. Evans, Clarksburg, and Frank J. Holroyd, Princeton; and member, civil defense advisory council, Thomas G. Reed, Charleston.

WISCONSIN

Hospital News.—The United Hospitals Fund in Milwaukee recently received from the Falk Corporation a contribution of $60,000, which will be allocated to meet the cost of building and equipping specific units in hospitals participating in the fund program.

University News.—Dr. Theodore C. Erickson, who came to the University of Wisconsin Medical School, Madison, in 1941 as associate professor of neurosurgery, has been promoted to full professorship.——Dr. John T. Mendenhall, chief of surgery at the VA Hospital in Madison, has been appointed associate clinical professor of surgery in the University of Wisconsin Medical School. He will serve without salary or tenure.

Personal.—Dr. Erwin H. Ackerknecht, professor of the history of medicine, University of Wisconsin Medical School, Madison, was recently awarded the William H. Welch medal by the American Association of the History of Medicine.——Dr. Harold P. Rusch, director of the McArdle Memorial Laboratory for cancer research at the University of Wisconsin, Madison, has been elected president of the American Association for Cancer Research.

GENERAL

Infectious Hepatitis.—The U. S. Public Health Service reports that during the first 15 weeks of 1953 9,637 cases of infectious hepatitis were reported, as compared with 6,688 for the corresponding period in 1952.

Meeting of Medical Veterans Society.—A meeting of the National Medical Veterans Society will be held at the Biltmore Hotel at 4 p. m. in New York on June 2. The chairman of the Committee on Arrangements is Dr. Oscar B. Hunter Jr., 915 19th St., N.W., Washington 6, D. C.

Meeting on Air Pollution.—The Air Pollution Control Association will hold its annual meeting at the Lord Baltimore Hotel in Baltimore May 25-28. The meeting will begin with a luncheon followed by a boat trip along the harbor front, to view the progress made in curbing smoke and other forms of air pollution. The technical program will include papers on railroad air pollution control and air pollution instrumentation. The banquet will be held Wednesday.

Meeting of Advisory Committees to Selective Service System.—A meeting of chairmen and members of state medical advisory committees to the Selective Service System will be held on Friday, June 5, under the sponsorship of the National Medical Advisory Committee to the Selective Service System. The meeting will begin at 10 a. m. and will be conducted at the Institute of Physical Medicine and Rehabilitation, 400 E. 34th St., New York. The purpose of the meeting is to discuss problems incident to the administration of the "Doctor-Draft law."

Meeting of Tuberculosis Physicians.—The American Academy of Tuberculosis Physicians will hold its annual meeting at the Hotel Roosevelt, New York, May 30, under the presidency of Dr. Robert G. McCorkle, San Antonio, Texas, whose presidential address "Has the Diagnosis and Treatment of Tuberculosis Changed in the Past 25 Years?" will be delivered at the luncheon, 12:30 p. m. Dr. Robert G. Bloch, chief, division of pulmonary diseases, Montefiore Hospital for Chronic Diseases, New York, guest speaker, will address the luncheon meeting.

Meeting on Investigative Dermatology.—The annual program of the Society for Investigative Dermatology, Inc., will be held at the Hotel Belmont Plaza, New York, May 30-31, under the presidency of Dr. Theodore Cornbleet, Chicago, who will deliver the presidential address on "Dermatology of Tomorrow, Some Areas for Dermatologic Research" at 9:30 a. m. Saturday. Thirty-one other presentations will be made. A cocktail party and dinner will be held for members and guests at 7 p. m. Saturday ($10 per person). Requests for reservations may be sent to Dr. Herman Beerman, Secretary-Treasurer, 255 S. 17th St., Philadelphia 3.

Meeting of Ophthalmologists.—The American Ophthalmological Society will hold its annual meeting at the Homestead, Hot Springs, Va., May 28-30, under the presidency of Dr. Conrad Berens, New York. Twenty-one presentations are scheduled. Speakers by invitation include Dr. James W.

Kernohan, Rochester, Minn., Dr. Maurice Victor, Boston, Dr. David E. Shoch, Chicago, Dr. Joseph A. C. Wadsworth, New York, Drs. Knud K. Dreisler and William Sweet, Boston, and Dr. Bernard Becker, Baltimore. There will be a reception for new members Thursday, 6 p. m. Golf and skeet tournaments will be held Friday afternoon.

Medical Women Meet in New York.—The American Medical Women's Association will hold its annual meeting at the Barbizon-Plaza Hotel, May 29-31, under the presidency of Dr. Evangeline E. Stenhouse, Chicago. Dr. Elaine P. Ralli, New York, the Woolley memorial speaker at the dinner Saturday, 7 p. m., will discuss "Physiological Disturbances in Patients with Cirrhosis of the Liver and the Treatment of the Disease." Sunday, 1 p. m., the various specialties will have round-table luncheons, and at 7 p. m. at the inaugural banquet Dr. Judith E. Ahlem, Livermore, Calif., will deliver the presidential address.

Meeting of Rheumatism Association.—The annual meeting of the American Rheumatism Association will be held at the Waldorf-Astoria, New York, May 28-29, under the presidency of Dr. Currier McEwen, New York, who will deliver the presidential address Thursday at 2 p. m. Thirty papers will be presented and 39 read by title. A panel discussion, "A. R. A. Cooperative Study of Cortisone Therapy in Rheumatoid Arthritis," will be held Thursday afternoon. The New York Rheumatism Association will be host at cocktails, Thursday 6 p. m., which will be followed by the association dinner, at which R. Keith Cannan, D.Sc., guest speaker, will present "Our Embattled Ivory Towers."

Russell Hibbs Meeting.—The Russell A. Hibbs Society will hold its annual meeting at the George Washington University Hospital, Washington, D. C., May 30, under the presidency of Dr. Carl Berg of that city. The program includes the following papers:

Effect of Ionizing Radiations on Bone Other Than Marrow, Murray M. Copeland, Washington, D. C.
Treatment of Acute Hand Injuries, Raymond M. Curtis, Baltimore.
Intramedullary Fixation of Fractures, Col. Joseph W. Batch, Washington, D. C.
Factors Affecting the Trend in Antibiotic Therapy, Monroe J. Romansky, Washington, D. C.

The dinner will be at the Shoreham Hotel, 7 p. m.

Proctologists Meet in New York.—Physicians are cordially invited to the annual convention of the International Academy of Proctology at the Plaza Hotel, New York, May 29-31. The meeting this year will be extended to include a surgical clinic and seminar at Jersey City Medical Center under the direction of Dr. Earl J. Halligan. The "wet clinic" and seminar will be held on Thursday and a motion picture seminar of proctologic surgery on Sunday. Much of the program has been planned to answer the questions of general practitioners. There is no fee for attendance. For information, write to the Executive Offices of the International Academy of Proctology, 43-55 Kissena Blvd., Flushing, N. Y.

Schering Award Competition.—To encourage original reporting by medical students, the Schering Corporation will award prizes for papers on (1) antihistaminic treatment of upper respiratory allergies and infections, (2) hormone therapy of the degenerative diseases, and (3) new concepts in the treatment of peptic ulcer. Prizes include three of $500 for the best paper on each of these subjects; numerous $100 deans' awards; special citations; and professionally useful gifts. Deadline for entry forms specifying the title chosen is July 1. Manuscripts (limited to 5,000 words) must be postmarked by Oct. 1. All students duly matriculated in medical schools in the United States and Canada are eligible. Instructions are available from Schering Corporation, 2 Broad St., Bloomfield, N. J.

Annual Nutrition Awards.—At the annual dinner of the American Institute of Nutrition during its meeting with the Federation of American Societies for Experimental Biology in Chicago, April 8, the Borden award in nutrition of $1,000 and a gold medal was presented to Harold H. Williams, Ph.D., professor of biochemistry, Cornell University, Ithaca, N. Y., "for many research contributions on the vitamin components of human milk and on nutritional and biochemical changes during lactation," and the Osborne and Mendel award to Vincent du Vigneaud, Ph.D., professor of biochemistry, Cornell University Medical School, New York, "for his outstanding investigations on the chemical structure, metabolic interrelations, and nutritional significance of certain essential dietary constituents."

Publication on Cardiac Defects.—The American Heart Association and affiliates are distributing a handbook *Diagnosis of Congenital Cardiac Defects in General Practice*, written by Dr. Regina Gluck, assistant clinical professor of pediatrics, Bellevue Hospital, New York. The booklet, intended to clarify the function of the family physician in the diagnosis of congenital cardiac defects and in the management of patients, cautions against advising cardiac surgery before a definite diagnosis is made by a specialist and outlines the contribution to diagnosis and treatment that can be made by medical-surgical teams in special institutions. The booklet may be obtained from the American Heart Association, 44 E. 23rd St., New York 10.

Surgeons' Travel Club.—This group recently held its annual meeting in Houston, Texas, and Mexico City. In Houston, scientific programs were presented by the staffs of the University of Texas M. D. Anderson Hospital for Cancer Research, University of Texas Postgraduate School of Medicine, and the Baylor University College of Medicine. In Mexico City, programs were presented by members of the faculty of the University of Mexico College of Medicine and the Academy of Surgery. With membership limited to 35, the Surgeons' Travel Club was organized in 1941 to promote advancement of the knowledge of surgery and the fellowship of surgeons. Its meetings are held annually in the cities of its members. Hosts for the 1953 meeting were Drs. George W. Waldron and R. Lee Clark Jr. of Houston.

International Meeting on Fertility and Sterility.—The First World Congress on Fertility and Sterility, May 25-31, will be held at the Henry Hudson Hotel, New York, under the sponsorship of the International Fertility Association in conjunction with the American Society for the Study of Sterility. Simultaneous trilingual scientific sections will be held in the Auditorium and the Tudor Room, 8:30 a. m. to 10 p. m. About 140 papers with about twice that number of official discussants from 51 countries will be presented in the 23 sections of the congress. Papers and discussions will be printed in the transactions of the congress, which may be ordered from the arrangements committee at a special prepublication price of $19. For registration and information write to Dr. Abner I. Weisman, Chairman of the Arrangements Committee, 1160 Fifth Ave., New York 29.

Course in Rheumatic Fever.—The University of Utah College of Medicine and the Utah State Department of Health will sponsor a course in rheumatic fever and related conditions in children, June 11-13, at the Salt Lake General Hospital, Salt Lake City. Visiting speakers will be Dr. T. Duckett Jones, medical director, Helen Hay Whitney Foundation, New York, Dr. Robert A. Good, assistant professor of pediatrics, University of Minnesota Medical School, Minneapolis, Dr. Robert A. Aldrich, assistant professor of pediatrics, University of Oregon Medical School, Portland, and Capt. Chandler A. Stetson, U.S.A.F., Streptococcal Disease Laboratories, Fort Warren Air Force Base, Cheyenne, Wyo. Requests for information should be sent to Dr. John F. Waldo, Director, Department of Post-Graduate Medical Education, College of Medicine, University of Utah, Salt Lake City.

Meeting of American Diabetes Association.—The annual meeting of the American Diabetes Association will be held at the Hotel Commodore, New York, May 30-31. Dr. Frank N. Allan, Boston, will deliver the presidential address on "The Psychology of Diabetes" at the banquet in the Century Room,

7:15 p. m. Saturday, preceding presentation of the Banting medal to Dr. Shields Warren, Boston. Dr. Warren will speak on "Atomic Energy in Relation to Medicine." He will also present the Banting memorial lecture at the joint meeting with the Endocrine Society, Saturday 2 p. m. Sunday noon there will be a panel discussion on "The Clinical Use of Insulin," with Dr. Arthur R. Colwell, Chicago, as moderator, and at 4 p. m. Dr. Frederick W. Williams, New York, will serve as moderator for a panel discussion on "What It Means to Live with Diabetes."

Course in Cardiovascular Research.—A 12 month training course for cardiovascular investigators will be offered by the departments of physiology and pharmacology, Medical College of Georgia, Augusta, beginning July 1. The National Heart Institute, U. S. Public Health Service, is supporting the course. Graduates in medicine or related sciences who are highly recommended and acceptable to the program directors are eligible. There are no tuition fees. The research traineeships carry an annual stipend of $3,400, plus an allowance of $350 for each dependent. Transportation will be furnished a research trainee (but not his dependents) from his home or institution of residence to Augusta; return transportation is not provided. Applicants should write to directors: William F. Hamilton, Ph.D., department of physiology, or Raymond P. Ahlquist, Ph.D., department of pharmacology, Medical College of Georgia, Augusta.

Annual Meeting on Geriatrics.—The annual meeting of the American Geriatrics Society at the Hotel Commodore, New York, May 28-30, under the presidency of Dr. Willard O. Thompson, Chicago, is open to all of those interested in the problems of aging. Friday morning Dr. Clifton L. Reeder, Chicago, will serve as moderator for a panel discussion on "The Insurance Companies and the Aging Population," in which he will participate with Drs. Howard B. Brown, Springfield, Mass., Paul V. Reinartz, Newark, N. J., and Harold R. Leffingwell, Worcester, Mass. Dr. Thompson will be toastmaster at the annual dinner Friday, 7:30 p. m., in the West End Ballroom. He will speak on "Geriatrics Comes of Age," and Dr. Malford W. Thewlis, Wakefield, R. I., will talk on "Magic." Saturday afternoon the society and its guests are invited to see the work done at the William I. Sirovich Day Center, 201 Second Avenue, New York. The dramatic group and the orchestra will perform.

First Blakeslee Award.—At its annual meeting, the American Heart Association named Wade Arnold, executive producer of the National Broadcasting Company, as the first winner of the annual Howard W. Blakeslee award in the amount of $1,000 for outstanding scientific reporting in the field of heart and blood vessel diseases. Mr. Arnold was selected to receive the award "for his creative achievement" in writing and producing "Only One to a Customer," a documentary radio program on heart disease, broadcast over the NBC network last year. The award (*J. A. M. A.* **149:**879 [June 28]; **150:**1229 [Nov. 22] 1952), established last year in memory of Howard W. Blakeslee, late science editor of the Associated Press and founder of the National Association of Science Writers, who died of heart disease, is to be presented annually "to the individual whose creative efforts in any medium of mass communication are judged to have contributed most to public understanding of progress in research, and in the prevention, care, and treatment of heart and circulatory diseases."

Two Outbreaks of Typhoid.—According to the Department of Health, Education, and Welfare, U. S. Public Health Service, the Ohio Department of Health recently reported nine cases of typhoid (three cases in one family) in a settlement consisting of 30 homes. Investigation revealed that a 52-year-old woman, with a history of typhoid in 1932, had moved into three homes in the settlement since December, 1952. Two cultures on this woman have been positive for typhoid bacilli. Typhoid bacilli and Escherichia coli have been isolated from a well in the neighborhood.——The Massachusetts Department of Public Health reported that the diagnosis of a recent outbreak of typhoid with noncharacteristic symptoms in a high school for girls was delayed by a simultaneous outbreak of virus infection in the general population. The mother of one of the students at whose home a party was given was found to be discharging typhoid bacilli. She gave a history of having had the disease in 1921. Laboratory examination revealed that Salmonella typhosa, bacteriophage type A, was responsible for the outbreak. In addition, the investigation uncovered two cases of S. typhimurium in members of the junior class and one of S. litchfield in a food handler in the school cafeteria.

Endocrine Society Meets in New York.—The annual meeting of the Endocrine Society will be held at the Hotel Statler, New York, May 28-30, under the presidency of Dr. Paul Starr, Los Angeles. Papers will be presented Thursday in the Penn Top Room on gonads, sex hormones, and gonadotrophins (9:30 a. m.) and on adrenals and corticotropin (ACTH) (2 p. m.). The Friday morning session will be devoted to discussions on steroids and bioassay methods and the Friday afternoon session to papers on thyroid. Topics for discussion Saturday morning will be hypothalamus, parathyroid, growth hormone, and the pancreas. At a joint session with the American Diabetes Association at the Hotel Commodore, Dr. Shields Warren, Boston, will present the Banting Memorial Lecture on "An Interpretation of Diabetes in Light of Its Pathology." In all, 73 papers are scheduled for presentation, and 36 will be read by title. The annual dinner Friday, 7:30 p. m., in the Georgian Room, will be preceded by a cocktail hour sponsored by the donors of the awards of the society: Ayerst, McKenna & Harrison, Limited, Ciba Pharmaceutical Products, Inc., Schering Corporation, and E. R. Squibb & Sons. The awards will be presented at the dinner after the presidential address.

Chest Physicians Meet in New York.—The annual meeting of the American College of Chest Physicians will be held at the Hotel New Yorker, May 28-31, under the presidency of Dr. Andrew L. Banyai, Milwaukee. Seminars on diseases of the chest will precede the opening of the scientific sessions, three seminars being given Wednesday morning and three in the afternoon (fee, $7.50 for each series of three lectures). Reservation with check must be sent in advance to the American College of Chest Physicians, 112 E. Chestnut St., Chicago 11. Round-table luncheon meetings will be held Friday, Saturday, and Sunday, as will symposiums followed by panel discussion. Symposium topics include pulmonary function and physiological therapy, electrocardiography, rehabilitation of the cardiac patient, occupational diseases of the chest, and postoperative management in thoracic surgery. The general scientific session will be held Thursday at 8 p. m. and a motion picture session Friday, 8 p. m. The president's banquet Saturday 7:30 p. m. will be preceded by the annual convocation (formal) at 6 p. m. and a cocktail party sponsored by the Panray Corporation at 7 p. m., and will be followed by dancing and entertainment sponsored by the New York State Chapter of the college.

James Picker Awards.—Mutual Security Director Harold E. Stassen, president of the James Picker Foundation of New York, announces the award of about $40,000 in grants for radiology research at nine universities throughout the world. The recipients of new grants include Drs. Henry Doubilet, Maxwell H. Poppel, and John H. Mulholland, New York University, who will work on a method to obtain clear and detailed pictures of the pancreas, heretofore undetectable by x-rays. For the first time, a full scholarship in radiology was also approved by the foundation, the recipient being Dr. Walter M. Whitehouse, presently at the University of Michigan, Ann Arbor. Dr. Whitehouse will undertake studies to determine the effectiveness of new methods of seeing the lungs, kidneys, and other organs more clearly by x-ray. In addition, Dr. Sidney H. Dressler, National Jewish Hospital, Denver, will benefit by a $4,509 grant awarded last year by the foundation. Owing to the unavailability of essential equipment at that time, Dr. Dressler was not able to begin his study of the blood vessels of the lung before and after operations relating to tuberculosis and similar diseases. Applications for the 1954-1955 Picker Foundation awards should be in the hands of the committee, at 70 Broadway, New York, not later than Nov. 1.

Increase in Psychiatric Service.—According to a nationwide survey by the National Association for Mental Health, clinic service for patients with mental or emotional disorders has shown a marked rise during the past five years. During 1952, 1,102 psychiatric clinics (475 full-time and 627 part-time) examined 225,000 new patients, including children, adolescents, and adults with complaints ranging from simple emotional or behavior problems to severe mental illness. While there has been no increase in the over-all number of psychiatric clinics since 1947, there has been an actual increase in service, since full-time clinics have more than doubled. According to Dr. George S. Stevenson, medical director of the association, "most of the clinics have long waiting lists. For every patient seen by the clinics, there are at least 10 to 20 more in need of their services." The survey discloses that more than 75% of the clinics are located in 11 states: California, Connecticut, Illinois, Maryland, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, and Virginia. The association recently published a directory of psychiatric services in the 48 states and the U. S. territories. Included in the listing are mental health clinics, state mental hospitals, VA and other federal mental hospitals, state governmental mental health authorities, and mental health associations.

Cancer Society Fellowships.—The American Cancer Society offers fellowships in biometry and statistical epidemiology at the Graduate School of Yale University, New Haven, Conn. Postdoctoral fellowships are open to U. S. citizens who possess a doctorate in medicine, philosophy, or science. They are intended for young men and women embarking on an investigative career, and also for more mature investigators desiring to extend their fields of competence. Fellows already possessing the degree of doctor of medicine may become candidates for the degree of doctor of philosophy. Fellowships are awarded for one year and may be renewed for two additional years. Fellows will be expected to carry out research in a field related to cancer and will be given training in biometry, biostatistics, and such other subjects as the university may deem necessary. Stipends will range from $3,000 to $4,000, depending on individual circumstances such as marital status and number of dependents. Travel expenses for one round trip from home to New Haven will be provided at the rate of five cents per mile. Results of work carried out by a fellow will be available to the public through the approved scientific channels without restriction. For information write to Edward C. Hammond, Sc.D., Director of Graduate Studies in Biometry, 51 Hillhouse Ave., Yale University, New Haven, Conn.

Oto-Ophthalmologists Meet in Los Angeles.—The annual meeting of the Pacific Coast Oto-Ophthalmological Society will be held at the Ambassador, Los Angeles, May 25-28, under the presidency of Dr. C. Allen Dickey, San Francisco. The golf tournament will be held at the Wilshire Country Club, Pasadena, Monday afternoon. The president's address Monday, 9 a. m., will be followed by a eulogy of the late Dr. LeRoy R. Pugmire of Ogden, Utah. Presentations by invitation include:

Use of Strontium 90 Applicator in B Ray Therapy of the Eye, Thomas C. Stevenson, Menlo Park, Calif.
Contamination of Fluorescein Solutions, Daniel G. Vaughan Jr., San Jose, Calif.
Changing Aspects of Broncho-Esophagoscopy, Thomas E. Douglas Jr., Seattle.
Transverse Incision in Pharyngeal Pulsion Diverticula, Samuel L. Perzik, Beverly Hills, Calif.
Emergency Treatment of Cardiac Arrest, Robert M. Hosler, Cleveland.
Serous Otitis Media, Henry B. Perlman, Chicago.

"An Otologic Seminar" (motion picture) by Dr. Heinrich F. G. Kobrak, Chicago, will be presented at 11:30 a. m. Tuesday. Thursday noon there will be a round-table discussion on "Treatment of Herpes Febrilis of the Cornea." Social events include a Hawaiian *Luau* 7:30 p. m. Tuesday in the Cocoanut Grove and a chuck wagon dinner Wednesday evening.

Therapeutic Society Meeting in New York.—The annual meeting of the American Therapeutic Society will be held at the Hotel Biltmore, New York, May 28-31. Dr. Francis M. Pottenger Jr. of Monrovia, Calif., will deliver the presidential address on "Evidences of the Wulzen Syndrome in Human Beings" Friday morning and will speak on "Sixty Years in Medicine" at the annual banquet Saturday. The annual Lewis H. Taylor Lectureship on "Recent Advances in Cardiac Surgery" will be delivered by Dr. Charles P. Bailey, Philadelphia, Friday morning. Dr. Arthur C. DeGraff, New York, will serve as moderator for the following symposium on tobacco:

Pharmacology of Tobacco, Harvey B. Haag, Richmond, Va.
Allergic Response to Tobacco, William C. Spain, New York.
Influence of Smoking upon the Gastrointestinal Tract, Robert C. Batterman, New York.
Evaluation of the Effects of Tobacco Smoking in Relation to the Central Nervous System, Organic or Psychiatrically, H. Randolph Unsworth, New Orleans.
Vascular Responses to Tobacco, A. Wilbur Duryee, New York.
Effects of Smoking of Nicotine on the Cardiovascular System of Normal Persons and Patients with Hypertension, Grace M. Roth, Ph.D., Rochester, Minn.
Role of Tobacco in Pulmonary Cancer, Ernest L. Wynder, New York.

Symposiums will also be held on "Recent Advances in Medicine" (Dr. Oswald P. J. Falk, St. Louis, moderator) and "Recent Advances in Surgery" (Dr. W. Wayne Babcock, Philadelphia, moderator).

Society News.—The American Academy of General Practice recently named Dr. William B. Hildebrand, Menasha, Wis., president-elect, and Dr. Merrill Shaw, Seattle, vice-president. ——At its annual meeting in New Orleans the American Otological Society, Inc., elected Dr. Frederick T. Hill, Waterville, Maine, president; Dr. D. E. Staunton Wishart, Toronto, Canada, vice-president; Dr. John R. Lindsay, Chicago, secretary-treasurer; and Dr. Henry L. Williams, Rochester, Minn., editor-librarian.——At the annual business meeting of the American Psychosomatic Society (551 Madison Ave., New York 22) the following persons took office: Dr. George L. Engel, Rochester, N. Y., president; Dr. Lawrence S. Kubie, New York, president-elect; and Dr. Theodore Lidz, New Haven, Conn., secretary-treasurer.——At its annual meeting in Concord, N. H., the New England Society of Psychiatry elected Dr. Edgar C. Yerbury, Middletown, Conn., president; Dr. John L. Smalldon, Concord, N. H., vice-president; and Dr. Peter B. Hagopian, Boston, secretary-treasurer.——At its annual meeting the Clinical Society of Genito-Urinary Surgeons elected Dr. Vincent J. O'Conor, Chicago, president; Dr. Reed M. Nesbit, Ann Arbor, Mich., vice-president; and Dr. Fletcher H. Colby, Boston, secretary-treasurer. The next meeting of the society will be at the University of Southern California in Los Angeles in February, 1954.——Dr. Louis H. Bauer, Hempstead, N. Y., President of the American Medical Association, and secretary-treasurer of the United States Committee, Inc., of the World Medical Association, announces the appointment of the following new members to the board of directors of that group: Robert L. Swain, Sc.D., New York, Mr. Charles Wesley Dunn, LL.B., New York; Dr. Austin Smith, Editor of THE JOURNAL; and Dr. Cortez Enloe Jr., New York.

HAWAII

Annual Medical Meeting.—The annual meeting of the Hawaii Territorial Medical Association was held April 30 to May 3 at Wailuku, under the presidency of Dr. Ransom J. McArthur of that city. The following program was presented:

Clinical Application of Prophylactic Procedures Against Cancer, Ian G. MacDonald, Los Angeles.
Bronchial Resection and Anastomosis, Paul W. Gebauer, Honolulu.
Harada's Disease, Howard E. Crawford, Hilo.
Effect of Kona Weather on Asthma Incidence in Children, William A. Myers, Honolulu.
Primary Carcinoma of the Liver, James G. Marnie, Honolulu.
Hetrazan Therapy for Filariasis in Samoan Navy Dependents in Hawaii, Lieut. W. L. Barnett and Commander Carl M. McCandless Jr.
Education in Parenthood, Richard Y. Sakimoto, Honolulu.
Endometrial Carcinoma, Frank C. Spencer, Honolulu.
Retroperitoneal Insufflation by the Presacral Route, Andrew L. Morgan, Honolulu.
Histoplasmin, Coccidioidin, Haplosporangin and Blastomycin Sensitivity in Hawaii, Harrison S. Paynter, Honolulu.
Studies in Primiparous Labors at Kapiolani Hospital, Herbert E. Bowles, Honolulu.
Clinical Aspects of Liver Fluke Infestation, Grant N. Stemmermann, Hilo.

FOREIGN

Symposium on Cortisone.—The University of Studies in Milan, Italy, announces that, under the sponsorship of the Società Italiana di Reumatologia, it will organize a European symposium on cortisone and suprarenal cortex in Milan, Aug. 31 to Sept. 2. For information, apply to Prof. C. B. Ballabio, Secretary of the Congress, Clinica Medica dell'Università di Milano, via F. Sforza 35, Milano, Italy.

World Conference on Medical Education.—The first World Conference on Medical Education will meet at the British Medical Association House, Tavistock Square, London, Aug. 22-29, to consider "Undergraduate Medical Education." The conference will be held under the auspices of the World Medical Association with the collaboration of the World Health Organization. Participating organizations include the Council for International Organizations of the Medical Sciences and the International Association of Universities. Topics to be discussed will be "Requirements for Entrance into Medical Studies," "Aims and Content of the Medical Curriculum," "Techniques and Methods of Medical Education," and "Preventive and Social Medicine." Information may be obtained from the World Medical Association, 2 E. 103rd St., New York 29.

CORRECTION

Penicillin Anaphylaxis, Nonfatal and Fatal Reactions.—In the article by this title in THE JOURNAL, May 9, 1953, page 119, in the first sentence after "Treatment of Reaction," the word "intravenously" should be "intramuscularly."

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1953 Annual Session, New York, June 1-5.

1953 Clinical Session, St. Louis, Dec. 1-4.

1954 Annual Session, San Francisco, June 21-25.

1954 Clinical Session, Miami, Florida, Nov. 30-Dec. 3.

ALASKA TERRITORIAL MEDICAL ASSOCIATION, Sitka, July 15-17. Dr. William P. Blanton, P. O. Box 2569, Juneau, Secretary.

AMERICAN ACADEMY OF TUBERCULOSIS PHYSICIANS, Hotel Roosevelt, New York, May 30. Dr. Oscar S. Levin, P. O. Box 7011, Denver 6, Secretary.

AMERICAN COLLEGE OF CARDIOLOGY, Hotel Statler, Washington, D. C., June 7-9. Dr. Philip Reichert, 480 Park Ave., New York 22, Secretary.

AMERICAN COLLEGE OF CHEST PHYSICIANS, Hotel New Yorker, New York, May 28-31. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Executive Director.

AMERICAN DERMATOLOGICAL ASSOCIATION, Lake Placid Club, Lake Placid, N. Y., June 9-13. Dr. Louis A. Brunsting, 102 Second Ave. S.W., Rochester, Minn., Secretary.

AMERICAN DIABETES ASSOCIATION, Hotel Commodore, New York, May 30-31. Dr. John A. Reed, 11 West 42d St., New York 36, Secretary.

AMERICAN GERIATRICS SOCIETY, Hotel Commodore, New York, May 28-30, Dr. Malford W. Thewlis, 25 Mechanic St., Wakefield, R. I., Secretary.

AMERICAN GYNECOLOGICAL SOCIETY, Lake Placid Club, Lake Placid, N. Y., June 15-17. Dr. John I. Brewer, 104 South Michigan Ave., Chicago, Secretary.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, Barbizon-Plaza Hotel, New York, May 29-31. Dr. Elizabeth R. Fischer, 10848 South Fairfield Ave., Chicago 43, Secretary.

AMERICAN NEUROLOGICAL ASSOCIATION, Hotel Claridge, Atlantic City, N. J., June 15-17. Dr. H. Houston Merritt, 710 West 168th St., New York 32, Secretary.

AMERICAN OPHTHALMOLOGICAL SOCIETY, The Homestead, Hot Springs, Va., May 28-30. Dr. Maynard C. Wheeler, 30 West 59th St., New York 19, Secretary.

AMERICAN ORTHOPEDIC ASSOCIATION, The Homestead, Hot Springs, Va., June 20-July 1. Dr. George O. Eaton, 4 East Madison St., Baltimore 2, Secretary.

AMERICAN PROCTOLOGIC SOCIETY, Hotel Statler, Boston, June 10-13. Dr. Stuart T. Ross, 131 Fulton Ave., Hempstead, N. Y., Secretary.

AMERICAN RHEUMATISM ASSOCIATION, Waldorf-Astoria, New York, May 28-29. Dr. William H. Kammerer, 33 East 61st St., New York 21, Secretary.

AMERICAN SOCIETY FOR THE STUDY OF STERILITY, Henry Hudson Hotel, New York, May 25-31. Dr. Walter W. Williams, 20 Magnolia Terrace, Springfield 8, Mass., Secretary.

AMERICAN THERAPEUTIC SOCIETY, The Biltmore, New York, May 28-31. Dr. Oscar B. Hunter Jr., 915 Nineteenth St. N.W., Washington 6, D. C., Secretary.

CALIFORNIA MEDICAL ASSOCIATION, Biltmore Hotel, Los Angeles, May 24-28. Dr. Albert C. Daniels, 450 Sutter St., San Francisco 8, Secretary.

CATHOLIC HOSPITAL ASSOCIATION OF THE UNITED STATES AND CANADA, Kansas City, Mo., May 25-28. Rev. John J. Flanagan, S.J., 1438 South Grand Blvd., St. Louis 4, Director.

CONFERENCE OF PRESIDENTS AND OTHER OFFICERS OF STATE MEDICAL ASSOCIATIONS, New York, May 31. Mr. Thomas R. O'Brien, 634 North Grand Blvd., St. Louis 3, Secretary.

IDAHO STATE MEDICAL ASSOCIATION, Sun Valley, June 14-17. Dr. Robert S. McKean, 305 Sun Bldg., Boise, Secretary.

MAINE MEDICAL ASSOCIATION, Eastland Hotel, Portland, June 21-24. Mr. W. Mayo Payson, 142 High St., Portland 3, Executive Secretary.

MEDICAL LIBRARY ASSOCIATION, New House Hotel, Salt Lake City, June 16-19 Miss Louise C. Lage, Lilly Research Laboratories, 740 South Alabama St., Indianapolis 6, Secretary.

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY, Los Angeles, May 24-28, Dr. H. P. House, 1136 West 8th St., Los Angeles 14, Secretary.

PACIFIC DERMATOLOGIC ASSOCIATION, Olympic Hotel and University of Washington, Seattle, July 9-10. Dr. Ervin H. Epstein, 447 29th St., Oakland 9, Calif., Secretary.

ROCKY MOUNTAIN CANCER CONFERENCE, Denver, July 8-9. Mr. Harvey T. Sethman, 835 Republic Bldg., Denver 2, Secretary.

SOCIETY FOR INVESTIGATIVE DERMATOLOGY, Belmont Plaza Hotel, New York, May 30-31. Dr. Herman Beerman, 255 South 17th St., Philadelphia 3, Secretary.

SOCIETY FOR VASCULAR SURGERY, Hotel Pierre, New York, May 31. Dr. George D. Lilly, 25 S.E. Second Ave., Miami 32, Fla., Secretary.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION, Alex Johnson Hotel, Rapid City, June 14-16. Dr. G. I. W. Cottam, 300 First National Bank Bldg., Sioux Falls, Secretary.

SOUTHERN OREGON MEDICAL SOCIETY, Oregon Caves Chateau, Oregon Caves, Ore., June 10. Dr. R. Ray Johnson, Grants Pass, Ore., Secretary.

SOUTHWEST ALLERGY FORUM, Hotel Muehlebach, Kansas City, Mo., June 14-16. Dr. Frederic Speer, 2601 Parallel Ave., Kansas City 4, Kans., Secretary.

STUDENT AMERICAN MEDICAL ASSOCIATION, Edgewater Beach Hotel, Chicago, June 15-17. Mr. Russell F. Staudacher, 535 North Dearborn St., Chicago 10, Executive Secretary.

THE ENDOCRINE SOCIETY, Hotel Statler, New York, May 28-30. Dr. Henry H. Turner, 1200 North Walker St., Oklahoma City 3, Secretary.

UPPER PENINSULA MEDICAL SOCIETY, Escanaba, Mich., June 19-20. Dr. N. L. Lindquist, 1103 Ludington St., Escanaba, Mich., Secretary.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION, Biltmore Hotel, Los Angeles, June 10-13. Mrs. L. Amy Darter, Division of Laboratories, State Department of Public Health, Berkeley, Calif., Secretary.

WYOMING STATE MEDICAL SOCIETY, Henning Hotel, Casper, June 11-13. Dr. Glenn W. Koford, P. O. Box 1252, Cheyenne, Secretary.

FOREIGN

BRITISH MEDICAL ASSOCIATION, Cardiff, S. Wales, July 13-17. Dr. A. MaCrae, B. M. A. House, Tavistock Square, London W.C.1, England, Secretary.

CANADIAN MEDICAL ASSOCIATION, Winnipeg, Manitoba, Canada, June 15-19. Dr. T. C. Routley, 135 St. Clair Avenue W., Toronto 5, Ontario, Canada, General Secretary.

CONGRESS OF INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, Chateau Frontenac, Quebec, Canada, October 26-29. Dr. A. William Friend, 515 Nome Ave., Akron 20, Ohio, Chairman, Program Committee.

CONGRESS OF INTERNATIONAL LEAGUE AGAINST RHEUMATISM, Geneva and Zurich, Switzerland, Aug. 24-29. For information write: Dr. W. Tegner, The London Hospital, London E.1, England.

CONGRESS OF THE INTERNATIONAL SOCIETY OF ANGIOLOGY, Lisbon, Portugal, Sept. 18-20. Dr. Henry Haimovici, 105 East 98th St., New York 28, N. Y., U. S. A., Secretary.

CONGRESS OF THE INTERNATIONAL SOCIETY OF SURGERY, Lisbon, Portugal, Sept. 14-20. Dr. L. Dejardin, 141, rue Belliard, Brussels, Belgium, General Secretary.

INTERNATIONAL CONFERENCE ON THROMBOSIS AND EMBOLISM, Basle, Switzerland, July 15-19, 1954. Dr. W. Merz, Chief Medical Officer, Gynecological Clinic, University of Basle, Basle, Switzerland, Hon. Secretary.

INTERNATIONAL CONGRESS OF ACUPUNCTURE, Kolpinghaus, Adolf-Kolping-Strasse 1, Munich, Germany, August 22-25. Dr. G. Bachmann, 29 Lilienstrasse, München 9, Germany, Organizer and Secretary.

INTERNATIONAL CONGRESS OF AUDIOLOGY, Leiden, Netherlands, June 5-6. Dr. H. A. E. ve Dishoeck, Leiden University, Leiden, Netherlands, President.

INTERNATIONAL CONGRESS OF ELECTROENCEPHALOGRAPHY AND CLINICAL NEUROPHYSIOLOGY, Boston, Mass., U. S. A., Aug. 18-21. Dr. Robert S. Schwab, Massachusetts General Hospital, Boston 14, Mass., U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF THE EUROPEAN SOCIETY OF HAEMATOLOGY, Amsterdam, Holland, Sept. 8-12. Dr. M. C. Verloop, Maliesingle 15, Utrecht, Holland, Secretary.

INTERNATIONAL CONGRESS ON GENETICS, Bellagio, Italy, August 4. Prof. C. Barigozzi, Instituto de Genetica, Universita de Milano, 10 via Celoria, Milan, Italy, Secretary.

INTERNATIONAL CONGRESS OF GYNECOLOGY, Geneva, Switzerland, July 21-26, 1954. Dr. Maurice Fabre, 1, rue Jules-Lefebore, Paris IXe, France, General Secretary.

INTERNATIONAL CONGRESS OF HIPPOCRATIC MEDICINE, Evian, France, Sept. 3-6. Prof. P. Delore, 13 rue Jarente, Lyons, France, Secretary-General.

INTERNATIONAL CONGRESS FOR HISTORY OF SCIENCE, Jerusalem, Israel, August 3-7. Prof. F. S. Bodenheimer, Hebrew University, Jerusalem, Israel, President.

INTERNATIONAL CONGRESS OF HYDROCLIMATISM AND THALASSOTHERAPY, Dubrovnik, Yugoslavia, May 8-16, 1954. Prof. C. Plavsic, Zeleni Venac 1, Belgrade, Yugoslavia, Secretary General.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Sao Paulo, Brazil, April 26-May 2, 1954. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U.S.A., Secretary-General.

INTERNATIONAL CONGRESS OF LOGOPEDICS AND PHONIATRICS, Milan and Stresa, Italy, Sept. 1-7. Dr. Deso A. Weiss, 115 East 86th St., New York 28, N. Y., U. S. A., General Secretary.

INTERNATIONAL CONGRESS ON MEDICAL LIBRARIANSHIP, London, England, July 20-25. Mr. W. R. LeFanu, % London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1, England, Chairman.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, University of Toronto, Toronto, Ontario, Canada, Aug. 14-21, 1954. For information write: Executive Officer, International Congress on Mental Health, 111 St. George St., Toronto, Ontario, Canada.

INTERNATIONAL CONGRESS OF MICROBIOLOGY, Rome, Italy, Sept 6-12. For information write: Dr. V. Puntoni, Citta Universitaria, Rome, Italy.

INTERNATIONAL CONGRESS ON OBSTETRICS AND GYNECOLOGY, Geneva, Switzerland, July 26-31, 1954. Prof. H. de Watteville, Maternité Hôpital Cantonal, Geneva, Switzerland, President.

INTERNATIONAL CONGRESS OF OTORHINOLARYNGOLOGY, Amsterdam, Netherlands, June 8-13. Dr. W. H. Struben, J. J. Viottastraat 1, Amsterdam, Netherlands, Secretary.

INTERNATIONAL CONGRESS OF PAEDIATRICS, Havana, Cuba, Oct. 12-17. Prof. Felix Hurtado, 5a Avenue 124, Miramar, Havana, Cuba, President.

INTERNATIONAL CONGRESS OF RADIOLOGY, Copenhagen, Denmark, July 19-25. Professor Flemming Norgaard, 10 Oster Voldgade, Copenhagen K, Denmark, Secretary General.

INTERNATIONAL CONGRESSES OF TROPICAL MEDICINE AND MALARIA, Istanbul, Turkey, Aug. 28-Sept. 4. Professor Dr. Ihsan Sükrü Aksel, Tunel Meydam, Beyoglu, Istanbul, Turkey, General Secretary.

INTERNATIONAL CONVENTION OF X-RAY TECHNICIANS, Royal York Hotel, Toronto, Canada, June 28-July 2. For information write: Miss Beatrice Hurley, R.T., Registrar, St. Catherine Hospital, East Chicago, Ind., U. S. A.

INTERNATIONAL FERTILITY ASSOCIATION, Henry Hudson Hotel, New York, N. Y., U. S. A., May 25-31. Dr. Abner I. Weisman, 1160 Fifth Avenue, New York 29, N. Y., U. S. A., Associate Secretary General.

INTERNATIONAL GERONTOLOGICAL CONGRESS, London and Oxford, England, July 12-22, 1954. Prof. R. E. Tunbridge, General Infirmary, Department of Medicine, The University, Leeds, England, President.

INTERNATIONAL HOSPITAL CONGRESS, London, England, May 25-30. Capt. J. E. Stone, 10 Old Jewry, London, EC2, England, Hon. Secretary.

INTERNATIONAL LEPROSY CONGRESS, Madrid, Spain, Oct. 3-10. Dr. Felix Contreras, Moreto 15, Madrid, Spain, Secretary.

INTERNATIONAL PHYSIOLOGICAL CONGRESS, Montreal, Canada, Aug. 31-Sept. 4. Dr. A. S. V. Burgen, Dept. of Physiology, McGill University, Montreal, Canada, Secretary.

INTERNATIONAL PSYCHO-ANALYTICAL CONGRESS, Bedford College, Regent's Park, London N.W.1, England, July 26-30. Dr. Ruth S. Eissler, 285 Central Park West, New York 24, N. Y., Hon. Secretary.

INTERNATIONAL SOCIETY FOR THE STUDY OF BIOLOGICAL RHYTHMS, Basle, Switzerland, Sept. 18-19. For information write: Prof. Dr. F. Georgi, Neurologische Universitats-Poliklinik, Socinstrasse 55, Basle, Switzerland.

INTERNATIONAL VETERINARY CONGRESS, Stockholm, Sweden, Aug. 9-15. Prof. Axel Isaksson, Institute of Veterinary Medicine, Stockholm 50, Sweden, Secretary.

IRISH MEDICAL ASSOCIATION, Waterford, Ireland, July 1-4. Dr. P. J. Delaney, 10, Fitzwilliam Place, Dublin, Ireland, Medical Secretary.

PACIFIC SCIENCE CONGRESS, Quezon City and Manila, Philippines, Nov. 16-28. Dr. Patrocinio Valenzuela, College of Pharmacy, University of the Philippines, Quezon City, Philippines, Secretary-General.

PAN AMERICAN CONGRESS OF THE MEDICAL PRESS, Buenos Aires, Argentine, July 12-16. Secretaria del Congress, 763 Uriburu, Buenos Aires, Argentine.

WORLD CONFERENCE ON MEDICAL EDUCATION, British Medical Association House, Tavistock Square, W.C.1, London, England, Aug. 22-29. Secretariat: World Medical Association, 2 East 103d St., New York 29, N. Y., U. S. A.

WORLD CONGRESS OF THE WORLD CONFEDERATION FOR PHYSICAL THERAPY, London, England, Sept. 7-12. Miss M. J. Neilson, Chartered Society of Physiotherapy, Tavistock House, South, Tavistock Square, London, W.C.1, England, Secretary.

WORLD MEDICAL ASSOCIATION, The Hague, Netherlands, Aug. 31-Sept. 7. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary-General.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* All centers where there are five or more candidates. June 22-24 and Sept. 8-10 (Part I only). Candidates may file applications at any time, but the National Board must receive them at least six weeks before the date of the examination they wish to take. *Part III.* June 9-26. Examination will be held in each of 31 centers having five or more eligible candidates. Exec. Sec., Dr. John P. Hubbard, 133 South 36th St., Philadelphia 4.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Various locations, July 16. Final date for filing applications was January 17. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: All candidates must now pass a written examination. *Written.* Various centers, Sept. 3. *Oral.* Philadelphia, Oct. 16-18. To be eligible, candidate must complete 36 months of training before Oct. 1. Final date for filing applications was May 1. Exec. Sec., Miss Janet Newkirk, 66 East 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* New York City, May 27-29. The closing date for acceptance of applications for oral examinations was January 2 except for candidates in military or Naval Service. *Oral.* San Francisco, Sept. 28-30, Chicago, Nov. 30-Dec. 2. The closing date for acceptance of applications for the San Francisco and Chicago oral examination was April 1. *Oral Examinations in the Subspecialties.* Allergy, New York City, June. Cardiovascular Disease, New York City, May 27, and Los Angeles, May. The closing date for acceptance of applications was February 1. *Written.* October 19. The closing date for acceptance of applications was May 1. Exec. Sec.-Treas., Dr. William A. Werrell, 1 West Main St., Madison 3.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, May or June 1953. Final date for filing application for the oral examination was Jan. 15, 1953. *Oral.* New Haven, October. Final date for filing application is July 1. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, Kingshighway and Euclid Ave., St. Louis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Oral and Pathological, Part II.* Chicago, May 17-24. Final date for filing application was Feb. 1. Sec., Dr. R. L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Practical.* New York City, June 6-10; Chicago, Oct. 5-9. *Written.* Various Centers, January 1954. Final date for filing applications is July 1. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Chicago, January 1954. Final date for filing application is August 15. Sec., Dr. Harold A. Sofield, 122 S. Michigan Ave., Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, Oct. 5-9. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Ann Arbor, June 26-27. Place undecided, Oct. 9-11 (tentative); Indianapolis, November. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION. *Oral and Written.* May 30-31. Final date for filing applications was March 31. Sec., Dr. Robert L. Bennett, 30 N. Michigan Blvd., Chicago.

AMERICAN BOARD OF PLASTIC SURGERY: Final date for receipt of case reports for the fall examination (October-November) is June 1 of each year. Corres. Sec., Mrs. Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8, Mo.

BOARD OF THORACIC SURGERY: *Written.* Various centers throughout the country, September 11. Final date for filing application is July 1. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2.

DEATHS

Seelig, Major Gabriel ⊕ Atherton, Calif.; born in Helena, Ark., Feb. 19, 1874; Columbia University College of Physicians and Surgeons, New York, 1900; professor emeritus of clinical surgery at Washington University School of Medicine in St. Louis, where a lectureship was established in his honor; formerly professor of surgery at St. Louis University School of Medicine; an Associate Fellow of the American Medical Association; member of the Missouri State Medical Association, American Surgical Association, and the Western Surgical Association; fellow of the American College of Surgeons; served during World War I; formerly a member of the Missouri State Cancer Commission; for many years practiced in St. Louis, where he was on the staff of the Jewish Hospital, director of cancer research, and later pathology, at Barnard Free Skin and Cancer Hospital; for many years on the board of the People's Hospital and member of the St. Louis Medical Library Board; author of "Medicine: An Historical Outline"; died March 11, aged 79, of cancer.

Barringer, Benjamin Stockwell ⊕ New Canaan, Conn.; born in New York City in 1878; Cornell University Medical College, New York, 1902; formerly on the faculty of his alma mater; member of the Medical Society of the State of New York, American Association of Genito-Urinary Surgeons of which he was past president, and American Urological Association; Associate Fellow of the American Medical Association; fellow of the American College of Surgeons; specialist certified by the American Board of Urology; a founder and past president of the New York Physicians' Art Club; formerly practiced in New York City, where he was affiliated with New York Infirmary for Women and Children and surgeon emeritus, urologic department, Memorial Center for Cancer and Allied Diseases; consulting urologist at Mary McClellan Hospital in Cambridge, N. Y., Nyack (N. Y.) Hospital and Nassau Hospital in Mineola, N. Y.; died March 14, aged 75, of coronary thrombosis.

Van Ingen, Philip ⊕ New York City; born in Washington, Conn., in 1875; Columbia University College of Physicians and Surgeons, New York, 1901; specialist certified by the American Board of Pediatrics; chairman of the committee on the medical care of children of the White House Conference on Child Health and Protection; past president of the American Pediatric Society, American Child Hygiene Association, and the American Academy of Pediatrics; at one time secretary of the American Child Health Association; member of the American Public Health Association; formerly professor of clinical diseases of children at his alma mater; served in France with the American Expeditionary Forces during World War I; affiliated with Presbyterian, New York Foundling, and Willard Parker hospitals; died March 28, aged 77, of arteriosclerosis and cerebral hemorrhage.

Lewis, Eugene Richards, Los Angeles; born in Dubuque, Iowa, May 14, 1877; University of Pennsylvania Department of Medicine, Philadelphia, 1899; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; formerly associate clinical professor of surgery (otology, rhinology, and laryngology), University of Southern California School of Medicine; member of the American Laryngological, Rhinological and Otological Society and the American Otological Society; fellow of the American College of Surgeons; served during World War I; on the staff of the Los Angeles County Hospital; died March 18, aged 75, of myocardial infarction, and carcinoma of the ascending colon.

Drayton, William Jr. ⊕ Philadelphia; born in Philadelphia Jan. 27, 1881; University of Pennsylvania Department of Medicine, Philadelphia, 1904; specialist certified by the American Board of Psychiatry and Neurology; associate professor of neurology at Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; served overseas during World War I; formerly psychiatrist to the medical department of the Municipal Court; for many years member of the board of directors of the Pennsylvania School for the Deaf; visiting psychiatrist to the Philadelphia General Hospital; died in the VA Hospital, Coatesville, March 17, aged 72, of bilateral bronchopneumonia.

Benson, Raymond La Verne ⊕ Lucedale, Miss.; Louisiana State University School of Medicine, New Orleans, 1942; member of the American Academy of General Practice; served during World War II; died April 5, aged 36, of injuries received in an automobile accident.

Bremser, William Edward, Fredericktown, Mo.; St. Louis College of Physicians and Surgeons, 1909; served as county coroner; died March 12, aged 76, of cancer.

Brown, Abraham Joseph ⊕ Philadelphia; University of Cincinnati College of Medicine, 1920; an examining physician for the city board of education; affiliated with the Jefferson Hospital, where he died March 22, aged 67, of cerebral hemorrhage.

Caldwell, John Dean ⊕ Santa Barbara, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1899; an Associate Fellow of the American Medical Association; member of the Medical Society of the State of Pennsylvania; served during World War I; died Feb. 7, aged 79, of cerebral thrombosis.

Crosson, James ⊕ Leesville, S. C.; University of Tennessee Medical Department, Nashville, 1905; served as president of the Lexington County Medical Society; for a time on the city council and for many years chairman of the board of health; died in January, aged 86.

Culver, John Thayer, Sacramento, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; died Feb. 2, aged 82, of generalized arteriosclerosis and hemorrhage from duodenal ulcer.

Cutting, Herwald ⊕ Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1912; died March 10, aged 70, of coronary occlusion.

DeLuca, Horatio Roger ⊕ Bridgeport, Conn.; George Washington University School of Medicine, Washington, D. C., 1915; member of the American Society of Clinical Pathologists; affiliated with St. Vincent's Hospital, where he died March 4, aged 60, of congestive heart failure.

De Tomasi, Romeo Q. ⊕ Detroit; Detroit College of Medicine and Surgery, 1921; on the staff of the Grace Hospital, where he died Feb. 26, aged 59, of carcinoma of the gallbladder.

Eberhart, Ira A., Sacramento, Calif.; Jefferson Medical College of Philadelphia, 1889; died in Sacramento County Hospital Feb. 20, aged 93, of cerebral hemorrhage.

Ellis, Aller G. ⊕ Plainfield, N. J.; Jefferson Medical College of Philadelphia, 1900; member of the Colorado State Medical Society; at one time an associate professor of pathology at his alma mater; for many years in charge of the pathological department of the Royal Medical College in Bangkok, Siam, under the auspices of the Rockefeller Foundation of New York; died Feb. 19, aged 84, of arteriosclerosis.

Ely, George Taylor, Columbus, Ohio; Cleveland University of Medicine and Surgery, 1897; served on the staff of Mount Carmel Hospital; died in St. Anthony's Hospital Feb. 25, aged 81, of cerebral arteriosclerosis.

Farmer, Grosvenor S. ⊕ Watertown, N. Y.; New York Homeopathic Medical College, New York, 1874; died March 12, aged 103, of myocarditis.

⊕ Indicates Member of the American Medical Association.

Fitch, Emery Moore ✠ Claremont, N. H.; Dartmouth Medical School, Hanover, N. H., 1905; member of the founders' group of the American Board of Surgery; member of the New England Surgical Society; fellow of the American College of Surgeons; director of the People's National Bank; on the staff of Claremont General Hospital, where he died Feb. 3, aged 76, of arteriosclerotic heart disease.

Ford, Charley Edward, Roanoke, Ala.; Atlanta Medical College, 1914; past president of the Randolph County Medical Society; served during World War I; affiliated with Knight Sanatorium; died March 9, aged 66, of carcinoma of the stomach and liver.

Fox, Noah ✠ Chicago; Rush Medical College, Chicago, 1923; clinical assistant professor of otolaryngology at University of Illinois College of Medicine; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American College of Allergists; fellow of the American College of Surgeons; served during World War I; on the staffs of the Mother Cabrini Memorial, Illinois Central, and Jackson Park hospitals; died April 9, aged 57, of bilateral diffuse bronchopneumonia.

Gildersleeve, John Andrew, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1912; affiliated with Victory Memorial Hospital and the Norwegian Hospital, where he died March 23, aged 69, of gastrointestinal hemorrhage.

Girard, Frank Robert ✠ San Francisco; Medical Department of the University of California, San Francisco, 1903; formerly on the faculty of the Stanford University School of Medicine; for many years on the staff of Southern Pacific Hospital; died in Tucson, Ariz., Feb. 28, aged 70, of paralysis of the respiratory muscles and traumatic paraplegia.

Gleason, Charles Dennis Raymond, Hayward, Calif.; University of California Medical School, San Francisco, 1902; died in Oakland March 8, aged 82, of cerebral thrombosis.

Goettling, Charles Alfred, Middleburg, Va.; University of Maryland School of Medicine, Baltimore, 1910; died Jan. 30, aged 65.

Goodwin, Newland Augustus, Chicago; Detroit College of Medicine, 1892; also a pharmacist; died in the Ravenswood Hospital March 21, aged 83, of arteriosclerotic heart disease, following a fracture of the femur as the result of a fall.

Graves, Nathaniel A. ✠ Kirkland, Ill.; Bennett Medical College, Chicago, 1890; at one time on the faculty of his alma mater; formerly practiced in Chicago, where he was on the staffs of the Cook County and the Norwegian Lutheran Deaconess hospitals; died in St. Petersburg, Fla., Feb. 15, aged 88, of influenza.

Healy, Thomas Francis, Bridgeport, Conn.; Niagara University Medical Department, Buffalo, 1893; served on the staff of St. Vincent's Hospital; died Feb. 19, aged 83, of arteriosclerotic heart disease.

Henderson, Ira Milton ✠ Chicago; Northwestern University Medical School, Chicago, 1922; served during World War I; accidentally shot and killed Feb. 26, aged 62, while cleaning his gun.

Herndon, Richard Fleetwood ✠ Springfield, Ill.; Rush Medical College, Chicago, 1914; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; affiliated with Memorial and St. John's hospitals; died Feb. 19, aged 63, of carcinoma of the prostate.

Hill, David Hendrix ✠ Charleston, W. Va.; Medical College of Virginia, Richmond, 1914; in 1948 secretary of the Boone County Medical Society; served on the staff of the Kanawha Valley Hospital; co-founder of the Madison General Hospital in Madison, where he served as chief surgeon until his retirement; died in Radford Feb. 17, aged 63, of acute coronary occlusion.

Holland, Gilmer Gustave, Holland, Va.; Medical College of Virginia, Richmond, 1920; died in Louise Obici Hospital, Suffolk, Feb. 13, aged 59, of coronary thrombosis.

Hollister, Bruce Allan ✠ West Chicago, Ill.; University of Chicago, the School of Medicine, 1932; served during World War II; affiliated with Community Hospital in Geneva and St. Joseph's Mercy Hospital in Aurora; died in Boulder, Colo., March 1, aged 53, in an automobile accident.

Honaker, George Thomas ✠ San Leandro, Calif.; Barnes Medical College, St. Louis, 1900; Rush Medical College, Chicago, 1903; died Feb. 22, aged 74, of coronary occlusion and arteriosclerosis.

Horine, Elmer S., Maywood, Ill.; Physio-Medical College of Indiana, Indianapolis, 1897; died April 1, aged 80, of heart failure.

Hoyt, Doctor C. ✠ Chicago; Rush Medical College, Chicago, 1902; served on the staff of the American Hospital; died March 15, aged 76, of arteriosclerotic heart disease.

Huntington, William Henry ✠ Portland, Ore.; George Washington University School of Medicine, Washington, D. C., 1910; specialist certified by the American Board of Otolaryngology; served during World Wars I and II; formerly on the faculty of the University of Oregon Medical School; affiliated with the Doernbecher Memorial Hospital for Children and Multnomah Hospital; died in Cuernavaca, Mexico, Jan. 20, aged 73, of cerebral hemorrhage and hypertension.

Jacobson, Jason Joseph ✠ Mamaroneck, N. Y.; University of Glasgow Medical Faculty, Scotland, 1936; affiliated with the United Hospital in Port Chester; trustee and life member of the Westchester Jewish Center; died in New York Hospital in New York, Feb. 14, aged 43, of brain tumor.

Jedel, Meyer ✠ Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1900; served in France during World War I; member of the medical staff of the city health department; affiliated with Presbyterian and St. James hospitals; died March 7, aged 73, of arteriosclerotic heart disease.

Johnson, Albert H., Detroit; Detroit College of Medicine, 1893; died March 15, aged 82, of arteriosclerotic heart disease.

Jurney, Muldrew Prichard, Ackerman, Miss.; Chattanooga (Tenn.) Medical College, 1908; county health officer; died in Louisville March 10, aged 73, of a heart attack.

Krug, Bert Donald ✠ Dayton, Ohio; University of Cincinnati College of Medicine, 1941; member of the American Trudeau Society; affiliated with Good Samaritan Hospital, Stillwater Sanatorium, Dayton State Hospital, and the Miami Valley Hospital, where he died Feb. 20, aged 38, of cerebral hemorrhage.

Lapham, Anna Ross, Chicago; Northwestern University Woman's Medical School, Chicago, 1898; assistant professor of obstetrics emeritus at Northwestern University Medical School, which she joined in 1919; fellow of the American College of Surgeons; died in the Passavant Memorial Hospital March 31, aged 83, of carcinoma of the stomach.

Lerner, Allan, Brooklyn; Université de Paris Faculté de Médecine, France, 1936; served during World War II; affiliated with Beth-El and Maimonides hospitals; died Feb. 11, aged 45, of a heart attack.

Lipscomb, James Walton, Columbus, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1890; for many years president of the state board of health; formerly vice-president of the Mississippi State Medical Association; first president of the Lowndes County Medical Society; once county health officer; a director of the First Columbus National Bank; died March 1, aged 83, of uremia and general arteriosclerosis.

Loffer, Orla Wirt, Degraff, Ohio; College of Physicians and Surgeons of Chicago, 1897; served during World War I; died in Bellefontaine Feb. 19, aged 80, of coronary thrombosis.

Lohmiller, Royal Kasson, Superior, Wis.; University and Bellevue Hospital Medical College, New York, 1905; served during World War I; affiliated with St. Francis, St. Joseph's, and St. Mary's hospitals; died in VA Hospital, Minneapolis, Jan. 28, aged 73, of cerebral hemorrhage and a fractured hip.

Lyon, Claude C., Logan, Ohio; Starling-Ohio Medical College, Columbus, 1911; veteran of the Spanish-American War and World War II; died Feb. 15, aged 68, of coronary occlusion.

McCarty, John Louis ⊕ Bluefield, W. Va.; Kentucky School of Medicine, Louisville, 1898; an Associate Fellow of the American Medical Association; for many years president of the board of education for Big Creek District; died Feb. 1, aged 79, of a heart attack.

McClain, John Washington, El Paso, Texas; University of Nashville (Tenn.) Medical Department, 1905; served during World War I; died Jan. 30, aged 77.

McClelland, Silas Edward ⊕ Decatur, Ill.; Rush Medical College, Chicago, 1884; chairman of the board of directors of the Millikin National Bank; member of the board of trustees of the James Millikin estate; died March 7, aged 93.

McDevitt, Coleman Joseph ⊕ Murray, Ky.; University of Louisville School of Medicine, 1935; fellow of the American College of Surgeons; president of the Calloway County Medical Society; served as president of the Ohio State Obstetrics and Gynecology Association; affiliated with Murray Hospital; died in Louisville Feb. 5, aged 42, of a heart attack.

McHenry, Junius Cone ⊕ Gillette, Wyo.; University of Cincinnati College of Medicine, 1927; since March 1, 1943, county health officer; member of the state board of medical examiners from 1936 to 1949; affiliated with McHenry Hospital, where he died March 5, aged 57, of acute coronary occlusion.

Mackenzie, Alice Virginia Clopper, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1903; specialist certified by the American Board of Otolaryngology; affiliated with St. Luke's, Children's, and Hahnemann hospitals; died Feb. 25, aged 84, of coronary thrombosis.

McSheehy, Morgan Thomas, Whitinsville, Mass.; Columbia University College of Physicians and Surgeons, New York, 1904; died Feb. 14, aged 74, of cerebral hemorrhage.

Maraventano, Salvator George, New York City; University and Bellevue Hospital Medical College, New York, 1926; affiliated with Kew Gardens (N. Y.) Hospital; died March 10, aged 50.

Marshall, Calvin Clifford, Riviera Beach, Fla.; University of Pittsburgh School of Medicine, 1908; served on the staff of the Southside Hospital in Pittsburgh; died Feb. 24, aged 74, of carcinoma of the lung.

Mason, Morris Arthur, New York City; University and Bellevue Hospital Medical College, New York, 1911; served on the staffs of the Mount Sinai and Jewish Memorial hospitals; died March 4, aged 76, of carcinoma of the prostate.

Matthews, Ida Belle Phillips Hawk, Carlyle, Kan.; Kansas City (Mo.) College of Medicine and Surgery, 1918; died in Iola Feb. 3, aged 73, of carcinoma of the colon.

May, Edward Joseph ⊕ Brooklyn; University and Bellevue Hospital Medical College, New York, 1911; affiliated with St. Mary's Hospital; died March 1, aged 68, of arteriosclerosis and cerebral edema.

Merriman, Willis Edgar ⊕ Utica, N. Y.; Albany (N. Y.) Medical College, 1902; member of the American Psychiatric Association; retired in 1946 as director of the Utica State Hospital; died Feb. 14, aged 77, of heart disease.

Mershon, Oliver Francis ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1904; specialist certified by the American Board of Ophthalmology; assistant professor of ophthalmology at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; died Feb. 22, aged 79, of cerebral hemorrhage.

Miller, George Elmer ⊕ Chicago; Rush Medical College, Chicago, 1928; formerly on the faculty of his alma mater; died March 2, aged 64, of periarteritis nodosa.

Moench, Frederick, Belle Center, Ohio; Eclectic Medical Institute, Cincinnati, 1895; died Feb. 14, aged 81, of cerebral hemorrhage.

Moore, Ernest Sisson ⊕ Pasadena, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; an Associate Fellow of the American Medical Association; member of the Illinois State Medical Society; associate professor of medicine emeritus at his alma mater; died Feb. 18, aged 83, of arteriosclerosis with gangrene of the leg.

Moore, Thomas Joseph ⊕ Madeira Beach, Fla.; Duke University School of Medicine, Durham, N. C., 1945; certified by the National Board of Medical Examiners; served during World War II; affiliated with St. Anthony's and Mound Park hospitals in St. Petersburg; died in Duke University Hospital, Durham, N. C., Feb. 21, aged 32, of glomerulonephritis and peptic ulcer.

Moren, Edward ⊕ Minneapolis; University of Minnesota Medical School, Minneapolis, 1906; formerly on the faculty of his alma mater; fellow of the American College of Surgeons; served on the staffs of the Minneapolis General Hospital and the Swedish Hospital, where he died Feb. 28, aged 76, of uremia and arteriosclerosis.

Morris, Charles H., Milton, W. Va.; Louisville (Ky.) Medical College, 1878; died Feb. 19, aged 97, of bronchopneumonia, arteriosclerosis, and uremia.

Motley, Elliot Rector ⊕ Kinderhook, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; member of the Missouri State Medical Association; affiliated with Levering Hospital and St. Elizabeth Hospital in Hannibal, where he died March 11, aged 79, of cerebral thrombosis.

Mueller, Vincent J., St. Louis; Marion-Sims College of Medicine, St. Louis, 1896; died March 9, aged 87.

Muncie, Elizabeth Hamilton, Great Neck, N. Y.; New York Medical College and Hospital for Women, Homeopathic, 1891; died March 15, aged 87, of cerebral hemorrhage.

Murphy, Miles Joseph ⊕ Grand Rapids, Mich.; University of Michigan Medical School, Ann Arbor, 1927; served during World War II; on the courtesy staffs of the Blodgett Memorial and Butterworth hospitals; on the staff of St. Mary's Hospital, where he died March 10, aged 52, of acute leukemia.

Parsons, Alfred Morris ⊕ Houston, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1924; served during World War I; fellow of the American College of Surgeons; affiliated with St. Joseph's Infirmary, the Memorial and Methodist hospitals; died in Boston recently, aged 55, of carcinoma of the bladder.

Partridge, Raymond Blaine ⊕ East Rochester, N. Y.; University of Michigan Homeopathic Medical School, Ann Arbor, 1909; for many years health officer of the village of East Rochester; died in Strong Memorial Hospital, Rochester, Feb. 26, aged 69.

Patterson, Robert F. ⊕ Springfield, Colo.; Eclectic Medical University, Kansas City, Mo., 1910; died in Corwin Hospital, Pueblo, Feb. 7, aged 67, of auricular fibrillation.

Ploughe, Monroe L. ⊕ Elwood, Ind.; Medical College of Indiana, Indianapolis, 1892; served on the staff of the Mercy Hospital; died Feb. 7, aged 88, of cerebral hemorrhage and hypertrophy of the prostate.

Prichard, Joseph A. ⊕ Overland, Mo.; Marion-Sims College of Medicine, St. Louis, 1891; died Feb. 25, aged 86, of cerebral hemorrhage.

Quinn, Murray D., Liberty, Miss.; Louisville (Ky.) Medical College, 1897; died March 24, aged 80.

Scher, Maurice Alfred ⊕ Newark, N. J.; University and Bellevue Hospital Medical College, New York, 1927; fellow of the International College of Surgeons and the American College of Surgeons; on the staffs of the Beth Israel and City hospitals; died March 27, aged 51.

Smith, Erle Fisk ⊕ East Pittsburgh, Pa.; University of Colorado School of Medicine, Denver, 1912; affiliated with Braddock (Pa.) General Hospital and the Passavant Hospital in Pittsburgh; died in Columbia Hospital, Wilkinsburg, March 1, aged 64, of renal failure and myocardial insufficiency.

GOVERNMENT SERVICES

ARMY

Colonel McShane Appointed Associate Editor.—Col. Patrick I. McShane (MC) has been appointed an associate editor of the *Armed Forces Medical Journal,* replacing Col. Wayne G. Brandstadt, who had served the journal in an editorial capacity since its foundation in January, 1950, when the *Navy Medical Bulletin* and the *Bulletin of the United States Army Medical Department* was merged. Prior to the merger Colonel Brandstadt was editor of the *Bulletin of the United States Army Medical Department.* Colonel McShane received his profession training at Loyola University, Chicago, and was commissioned a first lieutenant in the Regular Army in 1937. He took graduate training in internal medicine at Fitzsimons Army Hospital, Denver, 1947, in Vienna, Austria, 1949, and military courses in the Army Medical School, 1938, and in the Command General Staff School, 1942.

AIR FORCE

Air University Board of Visitors.—The board of visitors of the Air University recently visited its various educational facilities. The board was represented at the School of Aviation Medicine, Randolph Field, Texas, by Dr. Detlev W. Bronk (second from left), president of Johns Hopkins University, and Dr. J. Roscoe

Meeting with Representatives of the Board of Visitors.

Miller (right center), president of Northwestern University. Others attending this session were: Col. Paul A. Campbell (left), director of research; Brig. Gen. Otis O. Benson Jr. (center), then commandant of the School of Aviation Medicine; Col. Victor A. Byrnes, chief of clinical medicine; and Col. Frederick J. Frese Jr., deputy commandant.

DEPARTMENT OF DEFENSE

Commission to Study Dependent Care.—Secretary of Defense Wilson appointed a Citizens Advisory Commission on Medical Care of Dependent Military Personnel to study the medical care of military dependents. Its first meeting was held April 27, and it is under instructions to report its findings and recommendations to Mr. Wilson "at the earliest practicable date." The commission will study all aspects of the controversial question of military medical care for dependents, including type and extent of care to be provided, categories of dependents to be eligible, and extent of facilities to be furnished by the federal government for these purposes.

Members of the commission are Harold G. Moulton, Ph.D., formerly president of Brookings Institution, chairman; Thomas I. Parkinson, president of Equitable Life Insurance Co. of America; Lewis W. Jones, president of Rutgers University; George W. Bachman, senior staff member of Brookings assigned to health matters; and Mrs. Eugene Meyer, wife of the chairman of the board of the *Washington Post.*

PUBLIC HEALTH SERVICE

Personal.—The Division of Venereal Disease has a new chief and a new assistant chief. Dr. James K. Shafer, who has served as assistant chief since 1950, was elevated to the post of chief, and Dr. Clarence A. Smith of Chicago was named assistant chief. Dr. Shafer succeeds Dr. Theodore J. Bauer, who recently became medical officer in charge of the Public Health Service's Communicable Disease Center, Atlanta, Ga. Dr. Smith has been venereal disease control officer for Chicago for the past two years. He was commissioned in the Public Health Service in 1937 and has seen duty in venereal disease control programs in Alabama and South Carolina.——Dr. Clarence T. McGraw has been assigned to Atlanta as medical officer in charge of the Medical-Dental Clinic of the Communicable Disease Center, succeeding Dr. Donald E. Fisher, whose commission in the Public Health Service was terminated.

Clinical Fellowships in Rehabilitation.—The U. S. Public Health Service has established a program of clinical fellowships in rehabilitation, administered by the National Institute of Neurological Diseases and Blindness at Bethesda, Md. Eligible for the fellowships are physiatrists, internists, neurologists, orthopedists, pediatricians, and physicians of other specialties who are carrying a heavy chronic patient load. If desirable, physicians with faculty or house-staff appointments may go to another institution for this specialized training. Salaries range from $3,600 to $5,500 per annum, depending on professional qualifications and number of dependents. In addition, there are advanced clinical fellowships with per annum salaries ranging from $5,500 to $8,000. Inquiries should be directed to the Chief, Extramural Programs, National Institute of Neurological Diseases and Blindness, Bethesda 14, Md.

Increased Enrollment in Nursing Schools.—Student enrollment in nursing schools has been increasing at a faster rate than the increase in the general population, according to the Division of Nursing Resources of the Public Health Service. The ratio of student nurses to population in 1900 was 16 per 100,000 population, whereas in 1950 there were 66 students per 100,000 population. The analysis further shows that in 1932 there were 15 graduate nurses per 100 patients in general hospitals, compared to 34 per 100 patients in 1952. This increase in number of nurses per patients does not represent an equivalent increase in service, however, since the work week has been reduced from an average of 56 hours in 1938 to 44 hours in 1950. The nursing profession has been attracting about the same proportion of the population to its ranks throughout the last 20 years, although it is a much larger proportion than was attracted in the early 1900's. At present this proportion is seven per cent of the female high school graduates.

VETERANS ADMINISTRATION

Influenza on an Arctic Island.—The isolated Arctic island, Little Diomede, in the Bering Strait a few miles off the coast of Siberia, was visited recently by a severe influenza epidemic. All but 3 of the 100 Eskimos are said to have been taken ill in February, and 6 had died when a call for help was received in Nome. Veteran James Freericks loaded up his single engine, light plane with medicine and supplies and took off with a physician, a nurse, and a priest. The fog-shrouded stricken island has no airfield, so Freericks landed his plane on the frozen ocean beach. Several days later the veteran made another trip to Little Diomede with additional supplies and medicine, thus providing a striking contrast to rescue missions of other years conducted by dog sled and canoe. Within a few days the epidemic was under control.

FOREIGN LETTERS

BELGIUM

Belgian Society of International Medical Law.—Under the presidency of Prof. René Sand and with the collaboration of medical and juridical leaders from the four universities of the country, the Belgian Society of International Medical Law was founded at Brussels on Jan. 29, 1953. Its aims, as set forth in the text of its statutes, are as follows: (1) to study international medical law and to work for its development; (2) to assure close collaboration between physicians and jurists in questions of international law as related to medical ethics; and (3) to collaborate in the solution of problems connected with humanitarian conventions and, in general, to study the relations between international law and medicine.

The juridical results obtained since the end of the last world war in the trial of medical war crimes have served as a starting point for a series of efforts to obtain a world statute for medicine. At the two poles of these efforts stand the work of the World Medical Association and the work of the Medico-Juridical Commission of Monaco.

The Belgian government transmitted to the World Health Organization the resolution passed by the 15th session of the International Office of Documentation of Military Medicine, the purpose of which was to secure a legal text that would define, without ambiguity, the rights and duties of physicians in time of war. The World Health Organization has put consideration of this aspect of international medical law on the agenda of the forthcoming World Health Assembly. The creation of a Belgian Society of International Medical Law, following the example of the French Society of International Medical Law, shows the extent to which physicians and jurists have interested themselves in the study of these questions.

At the inaugural session of the Belgian Society, Sen. Henri Rolin emphasized the necessity of obtaining codification of a world statute of medicine. He explained the growth of his ideas on the humanization of war since 1934. He was at first opposed to it. Having been plunged into the reality of war, he first felt that attempts to humanize were unrealistic, because the war was not limited to the combatants, the convention forbidding the sinking of a ship unless the safety of the crew had been assured was not respected, the combatants themselves sought an increase in the injuriousness of the weapons they used, and, finally, reprisals were practiced.

After World War II, however, he noted that certain conventions, in particular those relating to war prisoners, had been observed by the various belligerents, and that contrary to all juridical logic, they had been respected notwithstanding the absence of sanctions. Conventions, then, should be worked out because they lead the belligerents to reflect, to delay, and even to abstain. In closing, Rolin put before physicians the problem of medical research, which should be consecrated solely to the improvement of health and should not be turned from its purpose to collaborate in the advancement of techniques of aggression or destruction.

The Psychology of the Handicapped.—Last November, under the presidency of Professor Alexander, the Fifth Belgian National Assembly of Mental Hygiene was held at Charleroi. It was devoted especially to the study of the psychology of the handicapped. Two classes of handicapped persons, whose behavior is different, must be distinguished: the congenitally handicapped and those with acquired lesions.

Pierard defines the bases for the inferiority complexes that burden the handicapped. He thinks that the rehabilitation of a handicapped person should be directed toward a new profession adapted to his condition but correlated with that which he practiced before the accident.

The society points out that the amelioration of morale and physique in the handicapped is a matter of concern to all social and scientific circles. Various governments now are also taking part in activities reported on at world congresses held regularly, notably for assistance to the crippled, at Geneva, the Hague, London, Stockholm, and elsewhere.

The Belgian National League of Mental Hygiene wished to study this problem because improvement in the mental state of the person with a physical handicap contributes markedly to improvement in his physical condition as well. One can only wish that the persons concerned might first know of the efforts being made in their behalf and then profit by them. Similarly, the organizations created to assist them should know of the problems with which they have to deal.

There is room, therefore, for the establishment of a liaison between them. This has been accomplished in Belgium by the physician of the provincial social inspection. This physician is concerned with the following subjects: (1) educational propaganda so that special institutions may be made known and prejudices that are still held by the public at large and among parents may be combated; (2) the discovery with the help of communal administrations and all public and private agencies of all anomalies, both physical and mental; (3) regular and effective participation in the activity of the regional dispensary of mental hygiene; (4) social assistance to patients, advice, examinations at school, mediation with authorities, and possible placement in a special institution; (5) contact with the families of pupils in case of scholastic or other difficulties and social intervention, for example, in family allocations; and (6) help to former pupils in placement, advertising, and advice.

Familial Ulcerative Disease of Extremities.—After a well-documented historical review, Thevenard of Paris presented to the Belgian Society of Neurology in October, 1952, an elaborate study of a malady that has long been considered as due to "lumbosacral syringomyelia, probably familial." This idea has been perpetuated because anatomic controls have been almost entirely lacking. In 1942, Thevenard grouped some 60 of the few cases in the literature under the appellation of *l'acropathie ulcéro-mutilante familiale*. The syringomyelic origin seemed to him extremely improbable. It was necessary to wait until 1951 for a complete clinical study of the anatomic aspects (Denny-Brown's memoir). This study showed the absence of any syringomyelic or dysplastic lesion. The essential lesion is a primary degeneration of the spinal ganglion and of the posterior root in the levels corresponding to the distal segments of the four limbs.

The term "ulceromutilating acropathy" covers a certain number of conditions that have in common hereditary and familial characteristics and trophic and sensory disturbances of the extremities of the limbs, which remarkably often are localized in the distal areas.

The constancy of objective signs in the lower limbs, their comparative rarity and late appearance in the upper limbs, and their slowly progressive extension from the periphery to the proximal portion of the members, are striking characteristics that differentiate this disease from syringomyelia and permit it to be likened to Charcot-Marie's atrophy, which is an amyotrophic acropathy, while this is ulcerative and mutilating.

Crime in Children.—Before the Society of Mental Medicine of Belgium in November, 1952, Dellaert of Anvers studied the contributions of normal and abnormal characteristics in the genesis of crime in children. He believes that delinquent

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The items in these letters are contributed by regular correspondents in the various foreign countries.

children should be examined by a team in which the psychiatrist is accompanied by a biologist, a teacher, and a sociologist. The distinction between the normal and the abnormal is delicate. Is there, in certain children, an inborn and irreducible tendency to commit offenses? The diagnosis of such states is difficult, and their treatment is extremely delicate. There are many more psychopathic children among delinquents than among nondelinquents, but each child requires individual study. In any case, mental anomaly does not explain all delinquency.

The author examines critically doctrines relating to biological type and the manner in which abnormal elements are generally understood. Abnormality, he thinks, is not the essential element. The role of the psychiatrist should not be to make a diagnosis based on simple classification. He should aim at discovering the biological, sociological, and psychological elements in the origin of offenses. This is not a limited psychiatric problem, but a question pertaining to dynamic psychology. One must not follow a unilateral course; one should not be solely psychoanalytical. The psychiatrist applying dynamic psychology lives over, with the person he is studying, that person's struggles to realize an ideal life, struggles hampered by the psychic state of the individual and by his social environment. The physician should comprehend the patient's reactional phenomena, which are inspired by the impulse toward life.

CHILE

Sixth National Congress of Pediatrics.—The Sixth National Congress of Pediatrics, held in Santiago Oct. 23-26, 1952, coincided with the 30th anniversary of the founding of the Chilean Society of Pediatrics. Among the 300 persons attending were physicians from other South American countries. The opening session was presided over by the dean of the medical school at the University of Chile, Dr. Alejandro Garreton, and the president of the Chilean Society of Pediatrics, Dr. R. Gantes. In his opening speech, Dr. Gantes outlined the importance of pediatrics in Chile and the necessity of congresses where specialists can exchange their experiences in their field. He also stressed the enormous progress made recently in this particular branch of medicine. Dr. Garreton underlined the importance of the congress and also the tremendous success of the postgraduate course in pediatrics, in which specialists from Argentina, Bolivia, Brazil, Colombia, Peru, and Venezuela participated. During the same session Professors Ariztia, Baeza Goni, and J. Meneghello were made honorary members of the Peruvian Society of Pediatrics.

Epidemic Hepatitis.—The first topic was a review of the incidence of epidemic hepatitis during 11 years in the Roberto del Rio Hospital, presented by Dr. Bauza and his colleagues. The author pointed out that the incidence varies between 60 and 100 cases yearly and that the incidence is greatest in March, April, and May. Of the total number of cases, 80% occurred in children between 1 and 6 years of age. The author said that nothing could be added to classic descriptions of the symptomatology during the preicteric and icteric periods. In only 5 of a total of 850 cases did the hepatitis degenerate to cirrhosis. On the other hand, study of 70 cases of cirrhosis during the last 15 years revealed that 15 were secondary to hepatitis. Another subject discussed at the same session was liver damage in congenital syphilis by Dr. Rosselot and his colleagues. The session ended with a discussion of puericulture by Professor Gantes.

Cortisone and Corticotropin.—The second official topic, corticotropin (ACTH) and cortisone in pediatrics, was presented by Dr. Rosselot and co-workers, who pointed out that the exact indications for these drugs and criteria for adequate dosage, which vary not only with each patient but also during the evolution of a pathological process are still lacking. In correction of nutritional deficiency in infants, cortisone may in certain conditions facilitate greater assimilation of food by increasing the tolerance of the patient to protein and caloric intake, which greatly counterbalances the negative protein balance produced by the hormone. The neoglucogenesis produced by the drug is highly favorable to the undernourished infant. The author warns, however, that the increase in weight must be studied with great detail because water retention produced by the drug must be taken into consideration in determining whether the increase is a gain in real body weight. The author then analyzed the results of cortisone treatment of seborrheic dermatitis and concluded that the drug is useful in this condition. Cortisone also gave good results in the inactivation of rheumatic carditis, and in certain cases was even able to prevent sequelae when the attack was light. Regarding blood disorders, myeloblastic leukemias were not influenced by the drugs. In the cases of lymphoblastic leukemia it was possible to obtain partial or even total remissions. However, no definite opinion can be given because of the short period of observation. The other topics were acute nutritional disturbances in the infant and treatment of toxicosis.

Surgery in Tuberculosis.—The third session opened with presentation of results of surgical treatment of pulmonary tuberculosis in children by Drs. Matte and Ibanez. Study of the epidemiology of tuberculosis in Chile has revealed that at an early age the child is in contact with Koch's bacillus, thus making tuberculosis one of the main causes of infantile mortality. The prognosis of severe pulmonary tuberculosis in spite of all the new drugs is very serious. Thoracic surgery is a solution at times, however. Surgical treatment must be reserved exclusively for irreversible tubercular lesions (cavernous fibrocaseous processes) in which collapse therapy and drug therapy have failed. Among the other topics discussed were bronchial tuberculosis, isoniazid in treatment of tuberculosis in children, and surgical treatment of empyema.

Neurosurgery.—The Institute of Neurosurgery and Cerebral Investigations under Dr. Asenjo published its report of activities in 1952. During the last year 683 patients were hospitalized. Outpatient treatment was given to 1,239 patients. Operations done, including encephalographies, numbered 1,036; the operative mortality was 5.4%. During the year 1,963 electroencephalograms were made. The department of radiology noted a decrease in the number of encephalographies and ventriculographies and an increase in the number of arteriographies and simple x-ray examinations. Among its didactic activities the institute collaborated in a 2½ month course with students of neurology. A postgraduate course was also given. Among the 20 scientific papers published by the institute in America and Europe are papers on encephalocranial wounds, classification of vascular surgical diseases of the encephalon, congenital intracranial arterial aneurysms, and diagnosis of cerebral tumors. Among the guests of the institute were Mr. A. Renshow, president of the University of Albany; Dr. Bauer of the Rockefeller Foundation; Professor Fell of Montevideo; Professor Marion of France; Dr. Lip of England; Kroll of Germany; and many others from Europe and South America. The report concludes by outlining the urgent necessity of expanding the institute in Santiago and also of opening branches in Valparaíso and Concepción.

Procaine and Procaine Amide in Treatment of Cardiac Arrhythmias.—Dr. J. Ahumada and his colleagues reported on use of procaine in cardiac arrhythmias in *Revista Medica de Chile* for November, 1952. After outlining the history of the use of procaine, the authors point out that its clinical use is limited because of its action on the central nervous system and tendency to cause convulsions and because of the quickness of its neutralization in the blood. Since the discovery of procaine amide, a much more stable compound, its use in clinical medicine has increased. The advantages of procaine amide are that it can be administered orally, that it is quickly and completely absorbed by the digestive system, and that it is not neutralized in the body. According to experimental work, the drug increases the threshold of stimulation of the ventricles. The intensity of this effect is proportional to its

concentration in the blood. The conduction time in the auricle as well as in the ventricle increases. The most important toxic manifestation on the cardiovascular system is hypotension, which occurs in 33% of cases when the drug is injected intravenously. Anorexia, nausea, and vomiting are the most important gastric manifestations. Blood counts are necessary when the drug is administered for long periods.

Electrocardiographic changes include an increase in the QRS and QT intervals, and a decrease in voltage of the QRS and T waves. The experience of the authors coincides with that of foreign literature in that procaine amide is more effective in ventricular arrhythmias than in auricular arrhythmias. The drug is ineffective in chronic auricular fibrillation. The prophylactic use of procaine amide in thoracic surgery and especially in cardiac operations is stressed by the authors, as is its use in heart catheterization. The authors recommend that procaine amide be administered in a dose of 0.5 gm. orally every four to six hours. In paroxysmal tachycardia an initial dose of 1 gm. followed by 0.5 to 1 gm. is advisable. In auricular arrhythmias 1 to 5 gm. is administered in three or four doses. When the drug is given intravenously, doses of 100 to 500 mg. are used. The authors studied use of procaine amide in hypertension, cardiosclerosis, rheumatic heart disease, digitalis intoxication, and functional arrhythmias. The presence of cardiac sufficiency or insufficiency was not considered in selection of patients for this treatment. All patients were observed for 24 to 48 hours before administration of the drug except in the cases of paroxysmal tachycardia. The conclusions reached by the authors are similar to those reported abroad.

DENMARK

Long-Term Results with Corticotropin and Cortisone.—Reference has already been made in THE JOURNAL (**149:**79 [May 3] 1952) to what may be called short-term results with corticotropin (ACTH) and cortisone in diseases of the eyes. The Danish medical press is now beginning to publish long-term results reflecting the experiences of several years. From the University Hospital in Aarhus comes a report by Dr. Harriet Bratlund and Dr. C. Holten, who review their experiences with 40 patients suffering from rheumatoid arthritis and treated as both inpatients and outpatients between March 1, 1950, and Aug. 31, 1952. During the same period 126 patients with rheumatoid arthritis were, for various reasons, not given corticotropin or cortisone, although they were treated in the same hospital. Cortisone was given by mouth, at first in large doses and later in comparatively small maintenance doses. Good results were obtained in 33 cases, while in the remaining 7 cases the results were unsatisfactory. While only 7 of the 40 patients could carry out their usual work before treatment, as many as 29 could resume work on discharge from hospital, and as many as 26 of them are still at work. Another report on long-term results comes from medical department A of the Rigshospital in Copenhagen. The authors, Dr. Finn Fischer and Prof. Knud Bröchner-Mortensen, give an account of 51 patients of chronic polyarthritis treated between June, 1949, and January, 1953. Among them were 37 in whom the response was favorable, 8 in whom the improvement was less pronounced, and 6 in whom there was no change or the disease became worse. The number of completely disabled patients was reduced from 11 to 4. Though this treatment gave rise to no dangerous or fatal complications, side-effects were observed in nearly every case.

The position in general with regard to corticotropin and cortisone in Denmark is reviewed in a leading article in *Ugeskrift for Laeger* for Feb. 5, 1953. Here it is pointed out that corticotropin and cortisone have not proved of any value in arthrosis, and rheumatic fever may not respond more effectively to corticotropin and cortisone than to large doses of salicylates. But corticotropin and cortisone have shown themselves remarkably effective in a great variety of diseases hitherto not usually supposed to have any connection with the rheumatic diseases. Addison's disease, status asthmaticus, and a host of diseases of the eyes, skin, and vascular system have shown themselves remarkably amenable to this new treatment.

Neomycin and Bacitracin in Skin Diseases.—The search for new and effective antibiotics has been much encouraged by the tendency of penicillin and certain other antibiotics, as well as the sulfonamides, to give rise to a growing flora of bacteria resistant to them. Among the latest newcomers in the antibiotic family are neomycin and bacitracin, which have already been given an extensive trial in Denmark. *Ugeskrift for Laeger*, for Jan. 29, 1953, published as many as six different original articles on the subject. One of them comes from the Rudolph Bergh Hospital, Copenhagen, which is in the charge of Dr. Aage Kristjansen. The authors of this article, Dr. Margrethe Gade, Dr. Bent Korner, and Dr. Bent Sylvest, give an account of 74 inpatients who suffered from various pyogenic infections of the skin, and who were treated with an ointment containing 5 mg. of neomycin and 250 units of bacitracin per gram of ointment base, which consisted of petrolatum with 10% lanolin. Cultures were carried out in 34 cases and sensitivity tests in 26 of them. Staphylococci were by far the most frequent finding, and all the strains isolated were highly susceptible to the combination neomycin-bacitracin. Nearly all the 74 patients had hitherto been treated with no great effect by other remedies including penicillin and aureomycin. Between April 1 and July 1, 1952, these patients were treated with neomycin and bacitracin for periods ranging from 1 to 29 days, the average and commonest duration of treatment being 7 to 8 days, although there were many patients found to require only 3 days' treatment. The commonest of the skin diseases treated was eczema, of which there were 33 cases. In 27 of them the infectious factor was eliminated in a few days. Similarly good results were obtained in cases of leg ulcers, which became cleaner and free of pain under this treatment. The results varied more in cases of Besnier's prurigo and eczema mycoticum. The results were, on the whole, satisfactory in the cases of impetigo and pityriasis simplex. Altogether, a satisfactory effect was achieved in 54 cases, a slight effect in 11, and no effect in 5. In the remaining cases the disease was aggravated by the ointment, which had an irritating effect on the skin. Sensitization reactions did not occur in spite of the ointment having been applied for a long time in several cases.

Fatal Therapeutic Doses of Morphine.—Prof. Knud O. Möller, who is in charge of the University Pharmacological Institute in Copenhagen, had occasion in 1945 to investigate a fatal case of morphine poisoning complicated by alcohol, scopolamine, and barbituric acid poisoning. Since then he has been confronted by as many as 16 other cases in which doses of morphine, often quite small doses, were responsible for the patient's death. It is surprising that so many such cases should have been observed by one man in so short a period, seeing that the danger of combining morphine with alcohol, barbiturates, or some other sedative has not hitherto been emphasized in textbooks on pharmacology. In *Ugeskrift for Laeger* for Dec. 11, 1952, Professor Möller writes: "It can hardly have come to the general knowledge of doctors that an injection of therapeutic doses of morphine or morphine-scopolamine to persons much under the influence of alcohol or to others under the influence of moderate, toxic doses of barbituric acid may be directly dangerous to life or provoke death. I have found no reports on the subject in the literature."

Professor Möller points out that the ordinary therapeutic dose of morphine hydrochloride for an adult is 10 to 30 mg., i. e., for a person weighing 70 kg. a dose of 0.14 to 0.43 mg. per kilogram of body weight. The detailed records of his 17 cases show how fatal it may be to give morphine within these therapeutic limits if the patient is already under the influence of alcohol, a barbiturate, or some other sedative. The danger is, of course, much enhanced by giving morphine intravenously, a mode of administration that had been adopted in several of the cases under review, and that Professor Möller deplores as a comparatively common method in the hands of physicians. His distrust of intravenous morphine medication, which induces

intense euphoria, is emphasized by his remark that in many cases one intravenous injection of morphine has led to morphine addiction. "For these reasons morphine and allied substances should only under very exceptional circumstances be given by intravenous injection and then in moderate doses."

LONDON

Hazards of "Improved" Flour.—A report of a case in the *Lancet* (1:577, 1953) records a syndrome of eczema, mental depression, and anorexia "associated with ingestion of chemically treated flour." The patient is a housewife, aged 50, with no personal or family history of allergic disorders, who has been under constant medical care since 1940 because of a chronic symmetrical eruption subject to acute irregular exacerbations, involving the hands, wrists, face, and neck. In March, 1952, it was noticed that contact with flour exacerbated the condition. Investigations were then carried out, using loaves made as follows: (*a*) by a special aeration process from flour that was entirely untreated with chemicals, the flour being mixed in stainless steel containers and fermented in aluminum bowls; (*b*) by the same process, except that a small quantity of edible fat was used and the dough was made in mild steel pans. The flour in this loaf contained a small addition of monoglycerol stearate and 8 oz. of acid calcium phosphate per 280 lb. (127 kg.) of flour; (*c*) by the usual commercial process from flour containing 6 gm. of nitrogen trichloride per 280 lb. sack, potassium bromate 6 ppm, and benzyl peroxide, 20 ppm; and (*d*) by the usual commercial process from flour treated with chlorine dioxide and containing 55 ppm of chlorine dioxide and 6 ppm of chlorine. Loaves (*a*) and (*b*) produced no effects; loaves (*c*) and (*d*) always produced a recurrence of the syndrome within 48 hours. The conclusion of the authors, one of whom is the patient's family physician, is as follows: "A case is described in which the patient shows an allergic response to wheat-flour treated with nitrogen trichloride or chlorine dioxide. The question arises: Is this a rare case of allergy, or merely the first recognition of a common disorder?"

It is almost three years since the government accepted the recommendation of an interdepartmental committee that chlorine dioxide be substituted for nitrogen trichloride as an improver for flour, but acceptance has not yet been turned into action. As the *Lancet* points out in an editorial, the patient who was the subject of this investigation was unable to distinguish the bread made from untreated flour from that made from treated flour, and one may therefore "reasonably inquire whether the mechanical aeration process by which these loaves were produced is not a practicable alternative to the use of any chemical improver. It is in fact still demonstrably true that bread acceptable to the public cannot be made without exposing the flour to chemicals."

London Fogs: Demand for Action.—Following the phenomenal fog of last December, the London County Council has asked the ministers of housing and local government, of fuel and power, and of health to set up a medical scientific committee (1) to investigate the causes and effects on health and property of atmospheric pollution and fog, and suggest remedies, and (2) to inquire into the general problem of emission of oxides of sulphur from large installations consuming coal including electricity generating stations, with special reference to the desirability of installing gas washing plants to reduce sulphur emission. The council has been informed that the meteorologic factors responsible for the December fog were the almost complete absence of air movement and the low surface temperature, which produced an inversion whereby the normal upward air circulation was arrested. The fog problem is more serious in London than in any other part of the country because within its 120 square miles the County of London contains 20 power stations, consuming between them 3,250,000 tons of coal annually. About 65% of the coal burnt in an area of 20 square miles in southwest London is used at three power stations in this area. With temperature inversions and little air movement, as happened in December, there is a danger of sulphur dioxide becoming concentrated in the neighborhood of the power stations.

Smoke pollution has never been a popular subject with politicians in Great Britain, presumably because it has no vote catching propensities, and it will be interesting to see whether the mortality and morbidity of the December fog are big enough to goad the appropriate government departments into action. As the London County Council points out, the Department of Scientific and Industrial Research has been investigating for eight years the means of removing sulphur compounds from flue gases, but "any reports which they may have made to the Lord President of the Council have not been made public."

Smallpox Outbreak.—Smallpox has once again broken out, this time in Yorkshire. On March 12, a cotton worker was admitted to hospital with a diagnosis of scarlet fever. The next day he died, and the diagnosis, confirmed at necropsy, was smallpox. He had been vaccinated at the age of 2. There has now been another fatal case, and up-to-date there are four confirmed and four suspected cases in hospital.

As can be seen from the following table, there have been only two years since 1942 in which there have not been several cases of smallpox in this country.

Year	Cases	Deaths
1942	7	0
1943	0	0
1944	16	3
1945	4	0
1946	56	14
1947	78	15
1948	0	0
1949	19	5
1950	8	0
1951	27	10
1952	135	0

The 1952 epidemic, though the biggest, took a mild form. The 1951 epidemic was introduced by a returned airman who had been properly vaccinated and was not himself among the confirmed cases. The 1949 outbreak was introduced from a liner from the Far East. What is worrying the authorities is that a high proportion of the fatalities were among the unvaccinated and that, since the introduction of the National Health Service and its abolition of the last semblance of compulsion, there has been a definite drop in the number of routine vaccinations against smallpox in infancy. The latest complete figures are for 1950, and these show that in England and Wales there were 169,766 vaccinations in persons under the age of 1, which gives an infant vaccination acceptance rate of only 23.8%. The total of primary vaccinations at all ages in 1950 was 284,366, of which around 30,000 were over the age of 15. The number revaccinated was 85,460, most of whom were over 15 years of age and were proceeding abroad. In 1951, 406,960 persons were vaccinated, an encouraging increase compared with 1950, but details as to age and so forth are not yet available. Part of the increase was due to the outbreak that year, in Brighton, where 51,000 persons were vaccinated as part of the control measures for the outbreak.

Hospital Costs.—The Minister of Health has just published the hospital cost returns for England and Wales for the year ended March 31, 1952. These show that the average cost for each patient in the general nonteaching hospitals were £14.5s.11d. a week, compared with £13.10s.3d. in the previous year. In the London teaching hospitals the average weekly cost per inpatient was £23,13s.8d., compared with £17.15s.8d. in the provincial teaching hospitals. The comparable figures for the previous year were £23.16s.10d. and £17.5s.10d. Including the outpatient expenditure the weekly averages were £33.2s.4d. in London and £23.13s.6d. in the provinces. The national average weekly cost per patient was £16.19s.2d. in maternity hospitals, £4.1s.1d. in mental hospitals, and £9.6s.7d. in tuberculosis hospitals. There were some striking differences in different regions. Thus, for general hospitals with 1 to 50 beds the weekly average cost per patient ranged from £15.15s.2d. to £10.15s.10d., for hospitals with 101 to 300 beds from £18.11s.4d. to £12.16s.7d., and for hospitals with 301 to 900 beds from £19.6s.10d. to £12.14s.8d.

CORRESPONDENCE

PUBLIC SPEAKING

To the Editor:—The letter by Dr. John Gardiner on the use of the microphone published in THE JOURNAL (**151:**1369 [April 11] 1953) is excellent. It does not, however, mention certain other important factors and comments only in passing on reverberations. These factors are highly important whether one is speaking with or without a public address system. Every auditorium has unique acoustic characteristics. Acoustics may be improved by acoustic tile, plaster, and/or drapes. Even with these, few auditoriums approach perfection; nearly all require study by the speaker, if he is to make himself understood. Poor acoustic characteristics are the result of reflection of sound (the speaker's voice) from one surface to another in the auditorium so that the speaker's voice reaches the auditor's ear out of phase with one or more reflections from one or more surfaces. The resulting interference causes a frequently unintelligible jumble of sound.

Nearly 30 years ago, a minister in Minneapolis taught me the trick of effective speaking in an acoustically difficult auditorium. His church had extremely poor acoustic qualities, yet he was always clearly understood from any part of the church. The most important single trick is that of breaking one's speech, as follows: "One should—over-enunciate—and group one's words—so that enough time—elapses between groups—to permit echoes—of one group—to be dying—before starting—the next group." By so grouping words and phrases one can almost entirely overcome very poor acoustics. With a bit of practice, most speakers can learn to regulate this timing in any auditorium during the first three or four minutes of an address.

Almost as important is adjusting the pitch of one's voice to avoid resonance effects. Every chamber, whether it be an auditorium or a small, bare, hard-walled room, has a unique resonance pitch. Even a faint sound of the same pitch as the fundamental resonance pitch of the chamber or a harmonic thereof will set up a musical note that may persist for several seconds after the original sound has ceased. In one stadium, the shot from the gun is seldom heard as an explosion but rather as a high-pitched musical note of several seconds' duration. This is resonance. Although reverberation and resonance are closely akin, reverberation may be defined as nonsynchronous reflection and resonance as synchronous reflection of sound. A person who is reasonably sensitive to pitch can study the acoustic characteristics of an auditorium during the first two or three minutes of his address and can (1) adjust the pitch of his voice to avoid resonance and (2) space his words and phrases to avoid interference by reflection. If he follows one or more speakers, he should study the acoustics while they are speaking and, thereby, adjust his own pitch and timing more quickly.

Obviously one cannot speak as many words per minute by this method, but it is better to speak more slowly and be clearly understood. If an address is to be limited in time, it should be organized so that when delivered slowly it will still be within the time limits. Most addresses could be improved by the better choice of words necessitated by such trimming. An address so prepared and so delivered will not sound stilted. It will be pleasantly surprising.

The principles discussed are often even more important when a public address system is used. As suggested by Dr. Gardiner, a loudspeaker with too much volume can negate the best efforts of the best speaker; some speakers do better without a public address system. Owing to poor sound engineering, multiple loudspeakers in an auditorium are often worse than none because of mutual interference.

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TUMORS OF THE PAROTID GLAND

To the Editor:—The editorial "Tumors of the Parotid Gland" in the Jan. 31, 1953, issue of THE JOURNAL contains a number of inaccuracies, expresses several misconceptions, and treats a serious subject in a superficial manner. The surgeon who has had good training and experience in dealing with these tumors will note the deficiencies in the editorial, but the physician who may be called on to treat such conditions and relies in part on what he reads for guidance will be misled to the detriment of his patient. The following points must be emphasized.

It is not possible by sialography to determine the relationship of a tumor to the divisions of the facial nerve. As a benign tumor within the parotid gland expands, it becomes closely applied to numerous filaments of the facial nerve, distorting the position of these filaments. It is not unusual for various divisions of the facial nerve to be superficial and deep, as well as superior and inferior to portions of a given tumor. The surgeon who has properly performed a simultaneous nerve dissection and tumor removal realizes how impossible it is to determine preoperatively nerve-tumor relationship. The statement "All parotid tumors, whether benign or malignant, should be treated by means of total parotidectomy" must be qualified. Benign tumors must be treated by adequate excision with facial nerve preservation. The type of operation that is chosen for the treatment of each tumor must be based on a knowledge of the pathological changes involved. The surgical pathology of salivary gland tumors is not so obscure as is implied in the editorial. The pathological changes of this group of tumors are varied, and appraisal by the surgical pathologist may help the surgeon decide on the proper therapy, which must not be too radical or too conservative.

Tumors of the parotid gland fall more or less into four groups. Group 1 is made up of those tumors that may occur anywhere in the body and, in this instance, only happen to coincide with the parotid gland. Among these are lymphangiomas, hemangiomas, lipomas, tumors of nerve origin, dermoid cysts, and other cysts and sinuses of congenital nature. It is not necessary to remove the parotid gland completely in the treatment of most of these conditions, and failure to preserve the facial nerve is tragic.

Group 2 contains benign tumors of salivary gland origin; these occur more frequently in the parotid gland than elsewhere. Two of these are the cystadenoma lymphomatosum, or Warthin's tumor, and the oxyphil adenoma. No malignant variant of these two has yet been reported. The commonest tumor is the mixed tumor, which undergoes malignant change in less than 5% of cases (Rawson and others: *Cancer* **3:**445, 1950). These tumors should be removed by the technique of simultaneous nerve-tumor dissection, which calls for visualization of the portion of the facial nerve close to the tumor and its dissection away from the tumor as the operation progresses. The editorial does not mention this all-important technique, which must be employed if the facial nerve is consistently to be preserved and the tumor totally removed. Total parotidectomy with facial nerve preservation for a benign process is difficult, and all too frequently some portion of the facial nerve is damaged. It is an operation wherein the parotid gland must be removed in a fragmentary manner and not as a block excision. The only reason for this procedure would be a multicentric origin of benign tumors, for which we have no pathological evidence. The technique of simultaneous nerve-tumor dissection was described by Blair in 1912 (Surgery of the Mouth and Jaws, ed. 1, St. Louis, 1912, C. V. Mosby Co.), Adson in 1923 (*Arch Surg.* **6:**739 [May] 1923), and recently by Brown, McDowell, and Fryer (*Surg., Gynec. & Obst.* **90:**257, 1950), Byars (*Ann. Surg.* **136:**412, 1952) and Martin (*Surgery* **31:**670, 1952). These authors describe various points of technique, which are all helpful.

Group 3 is composed of primary malignant growths of the diffuse, invading, spreading type; often the undifferentiated carcinoma. Tumors of this group behave viciously and are similar in clinical behavior to the average carcinoma of the breast. Their proper treatment does not primarily involve total parotidectomy, which might be an incomplete procedure, but rather radical removal of all structures involved in the primary lesion. This may include the ramus of the mandible, overlying skin, a portion of the ear, zygoma, mastoid bone, or other structures. The operation is combined with a neck dissection in continuity. This neck dissection should be complete, and particular care should be taken to remove the lymph nodes of the posterior chain. The prognosis of such tumors is poor. Such an operation, of course, deliberately sacrifices the facial nerve. In some instances, primary, properly planned irradiation therapy may give rewarding palliation.

Group 4 is an important division made up of the mucoepidermoid tumor and the cylindroma. These tumors are characterized by clinical behavior entirely different from that of lesions in groups 2 and 3. They often cannot be differentiated on physical examination from benign processes. They must be considered as being malignant in most cases, but the growth pattern is different from that of the undifferentiated carcinoma. These tumors may be present for a long time, behaving in an innocent fashion, only to become invasive and to demonstrate malignant capabilities after a period of from a few months to 25 or 30 years after initial appearance. The so-called cylindroma, better designated adenocarcinoma, bears somewhat the same relationship to the undifferentiated carcinoma of the parotid gland that the papillary carcinoma of the thyroid bears to the more vicious malignant tumors of the thyroid gland. This tumor can metastasize and frequently terminates fatally. However, its progress, course, and prognosis differ from those of group 3 tumors. In planning treatment, it is necessary that the surgeon have an adequate knowledge of the growth habits of this tumor and the pathological changes it manifests, as well as the history and physical findings of the specific case under consideration. If such a tumor has entered an invasive phase, the treatment must be radical. If it is early and still in the dormant period, then the surgeon exercising good knowledge and judgment may choose a less mutilating but adequate procedure.

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GEOGRAPHY AND DISEASE

To the Editor:—The editorial entitled "Geography and Disease," which appeared in The Journal, March 21, 1953, page 1002, is of great interest. Nothing that I say should be interpreted in any way as derogatory in reference to the work of the American Geographical Society; I believe that to be of the utmost value. However, I should like to draw your attention to the fact that the geographical distribution of disease has been a preoccupation of pathologists and oncologists for many years. The first meeting of the International Society for Geographical Pathology was held in Geneva, Switzerland, more than 20 years ago. Triennial meetings were interrupted by World War II, but the society was revived at a meeting held in Liège, Belgium, in July, 1952. Dr. Robert A. Moore, of Washington University, St. Louis, was elected president of the society, and arrangements are well under way for a meeting in Washington, D. C., in September, 1954. Oncologists have given the matter careful attention through the medium of local and international groups. The Armed Forces Institute of Pathology, Washington, D. C., has a section on geographic pathology. These facts are drawn to your attention so that the efforts of groups other than the American Geographical Society will not be overlooked.

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SKIN TESTS IN ATOPIC DISEASE

To the Editor:—The article "Skin Tests in Atopic Disease" in The Journal, March 7, 1953, page 785, was very interesting; however, it contained statements that I believe require modification in three ways.

First, the routine allergy list in table 1 omits a very important allergen, horse serum. It is essential to know if a patient is sensitive to this substance, because of the possibility of giving it by injection via antitoxin. The knowledge that he reacts positively may prevent much future trouble. When the reaction is positive, I check on whether the patient has been immunized for tetanus and diphtheria, advising toxoid immunization if this has not been done. A certificate is given to the patient, if he is sensitive to horse serum, stating this condition, and, if he has been actively immunized, advising a booster injection, should the possibility of tetanus arise. If in addition to the booster dose a physician wishes to use antitoxin, my certificate recommends that a despeciated antitoxin be used or, if this is unavailable, that the antitoxin be given fractionally, in increasing amounts over a 12 hour period. The horse serum test should be included in all routine allergy studies, by the scratch method, or if done intracutaneously, diluted 1:100 and 1:10, with strict precautions for any reaction.

Second, in children skin test reactions to foods parallel clinical findings more closely than do the reactions in adults. Often the offending food in touching the lip will produce an allergy reaction there. It is not true, as often is heard, that infants or very young children cannot be tested. This procedure can be utilized at any age and prove of prime value.

Third, the authors detract from their fine article and contradict themselves when (page 786, paragraph 1) they state "skin tests should never be performed unless a physician is immediately available in case of a severe reaction" yet in their summary they refer to skin testing as a "valuable laboratory procedure." Allergy skin testing should not be referred to as a "laboratory procedure." This thought has done much harm to patients who were (and still are to a lesser degree), sent to laboratories where positive and negative reactions are literally interpreted and also when in case of reaction a physician may not be present.

Allergy skin testing is a highly specialized procedure of the greatest value when carefully appraised as part of an allergy study by the experienced allergist. This may require weeks of observation and intense survey, and in my experience the term "laboratory procedure" should be dropped.

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HEPARIN AND ANGINA PECTORIS

To the Editor:—In the article "Clinical Evaluation of Heparin in the Treatment of Angina Pectoris" by Dr. Binder and associates, in The Journal, March 21, 1953, page 967, reference is made to one of my papers. A statement appears that requires amendment. These authors say: "Objective demonstration of coronary insufficiency by the anoxemia test or by the two-step exercise electrocardiogram may be helpful in supporting the clinical diagnosis. It has been claimed, however, that false positive and false negative results may occur with each of these tests." It is recognized by the sponsors of the two-step test that in at least 5% of cases false positive results are obtained. On the other hand, it is one of the advantages of the anoxemia test, as has been pointed out repeatedly, that false positive results are not observed. The criteria of a positive result have been clearly defined and have been made sufficiently rigid to exclude such misleading occurrences.

The term false negative is a misnomer. Lesser degrees of coronary insufficiency sometimes are not demonstrable by means of the anoxemia test, but it has been stressed that a negative result does not rule out the possible presence of impairment of the coronary circulation. Only a positive test is of diagnostic value.

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BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Basis for Determining Loss of Use of Eyes.—This was a proceeding under the Workmen's Compensation Act to recover an award for loss of use of the plaintiff's eyes following an industrial accident. The trial court entered judgment for the defendant, so the plaintiff appealed to the Supreme Court of Illinois.

While in the employ of the Caterpillar Tractor Company, the plaintiff had an accident that resulted in his being hit on his glasses, the left lens broken, and the left eye injured. The plaintiff contended that he had sustained a permanent compensable injury to his left eye; that the injury destroyed the accommodation or coordination of both eyes; and that the injury decreased the corrected vision of the left eye. The defendant did not deny the accidental injury or that it resulted in a change in the structure of the plaintiff's left eye; it admitted that the accommodation of both eyes has been affected; admitted that the corrected vision of the injured eye has been decreased; but contended that all these changes are based on the functioning of the plaintiff's eyes with corrected vision, by the use of glasses; that so far as the uncorrected or naked vision of the petitioner's left eye is concerned it is the same as it was before the injury; and that the uncorrected or naked vision of the eye, without the use of glasses, lens, or artificial appliance is the only basis for determining injury to the eye under the provisions of the Workmen's Compensation Act. These contentions, said the Supreme Court, squarely presented for the first time the question whether the corrected vision or uncorrected, naked vision shall be the basis for determining loss of sight or loss of use of the eyes under the provisions of the Illinois Workmen's Compensation Act.

It is apparent from the stipulation filed in the case, based on the examinations of the optometrist, that prior to the accident the petitioner had defective vision in both eyes, due to a congenital condition and not as a result of any accident, which defective vision could be corrected to normal by the use of glasses. It is equally apparent that after the accident the petitioner had a defective vision that could not be corrected to normal by the use of glasses although, as measured by the usual and accepted optometric methods, the naked and uncorrected vision of the injured left eye was measured the same. The defendant therefore contended that the accident injured only the ability of the eye to respond to corrective measures and that such an injury is not compensable. Since our statute is silent as to the use of glasses or lens to be used as an artificial appliance in determining loss of sight or loss of use of an eye, argued the defendant, it may be presumed that the legislature did not intend that corrective appliances should be considered.

Laws of the type of compensation acts, said the Supreme Court, should not be interpreted and applied with the rigidity of constitutional provisions but should be interpreted and applied in a practical and common-sense manner to accomplish the ultimate purpose of the act. It is a matter of common knowledge that there are many useful and valuable employees whose naked uncorrected vision would leave them industrially blind. A presumption that the legislature intended to deny them the protection of compensation for injuries to their eyes would hardly be practical and common sense. We cannot agree that naked, uncorrected vision, alone, is considered under our Workmen's Compensation Act.

The general question whether corrected vision is a factor in determining the extent of eye injuries has been before the courts of other states and the decisions are in sharp conflict. Many of the differences are due to the court's interpretation of the purpose of the statute, i. e., if the purpose of the statute is to compensate in a specific amount for a specific loss, naked vision, alone, should be considered, but if the purpose of the statute is to compensate for loss of earning power, then corrected vision should be a factor. Another cause of the conflict lies in the inclination of the courts to do justice in the case then before it with no intention of establishing a rule binding in all other cases. The real difficulty, and one of the causes of the lack of harmony in the authorities, lies in the fact that neither rule is adequate to cover all cases. If naked vision alone is considered, the worker with corrected vision is not adequately protected, and, if corrected vision alone is considered, the worker with uncorrected vision is not fully protected. In the first instance, the loss of an eye industrially blind with naked vision but normal with correction would not be compensable; in the second, an injury rendering a normal eye industrially blind would not be compensable if it could be corrected to normal by the use of glasses.

In the case at bar, continued the court, we are required to determine which of the two rules should be applied under our Workmen's Compensation Act, where the injury is to an eye which is industrially blind without correction but normal with correction. As pointed out, our statute is silent on this question. We find nothing in the act which either expressly or indirectly indicates whether corrected or uncorrected vision shall be used in determining the extent of eye injuries compensable under the act, and it therefore is our duty to interpret and apply the act in a practical and common-sense manner to accomplish the ultimate purposes of the act. The theory behind compensation acts is that industry rather than society should care for its wrecked manpower. Every injury sustained in the course of the employee's employment that causes the employee such a loss should be compensable. In the instant case the petitioner had normal vision with glasses prior to the injury. The employer had employed him with his corrected vision and he was performing his work satisfactorily. The petitioner's corrected vision was just as valuable to both petitioner and his employer as was the uncorrected vision of his co-employee. The destruction of petitioner's corrected vision would be the same industrial loss to the petitioner and the same loss to industry as the vision of any other employee. The cost to the employer to reimburse petitioner for his loss is no greater than in the case of any other employee who is doing the same work and receiving the same pay. The vision that petitioner had prior to the accident was the vision he depended on for his industrial value and ability. That was the vision he was selling his employer, and the employer was receiving benefits from that vision equal to any other employee in the same work. The injury that petitioner sustained to that vision and the reduction of its industrial value was petitioner's actual damages by reason of the accident. Fully aware of the eminent authority to the contrary, it is our opinion, said the Supreme Court, that the injury here sustained by the petitioner should be compensable and that the basis for determining the extent of that injury should be the difference between the amount of corrected vision that he possessed prior to the accident and the highest corrected vision of which his injured eye was capable after the injury. We believe an employee with corrected vision should be given full advantage of such correction and that industry should be responsible to him for the vision which he is using for the benefit of industry.

Accordingly the judgment of the trial court denying a compensation award was reversed. *Lambert v. Industrial Commission, 104 N. E. (2d) 783 (Illinois, 1952).*

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Surgery, Chicago

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Potassium Depletion in Dogs: Effect on Wound Healing, on Blood Protein and Electrolyte Levels, and on Response to Anesthesia. J. D. Hardy, A. E. Borum, E. J. Pavsek.—p. 226.
*Diagnostic Lumbar Disk Puncture: Clinical Review and Analysis of 67 Cases. L. Walk.—p. 232.
*Subtotal Adrenalectomy for Cushing's Syndrome. W. Walters.—p. 244.

Diagnostic Lumbar Disk Puncture.—Walk reports on 67 patients in whom the intervertebral disks were studied roentgenographically after injection into the nucleus pulposus of a radio-opaque medium. A modification of Lindblom's method of diagnostic lumbar disk puncture was used, which avoids x-ray exposure of the hands of the roentgenologist by eliminating fluoroscopic control during the introduction of the needle. Walk observed that pain or coughing is more frequent in disks with rupture than in degenerated disks without rupture. Numbness, however is less frequent. A strongly positive Lasègue sign occurs oftener in disks with than without rupture; in simple rupture this sign usually disappears after some months, whereas in degenerated disks a strongly positive sign may be found for long periods. Differences are also found in some of the other clinical symptoms and signs. Two different clinical symptom complexes (syndromes) may be caused by the intervertebral disk—that of nerve root compression and that of irritation by a perineural spread of the contents of the nucleus pulposus. A combination of the two may also occur. Patients with disk prolapse, as diagnosed by myelography and by clinical findings, do not form a homogenous group, if examined by disk puncture. In most cases there is a ruptured disk. However, in rupture with spread of the contrast medium there is an indication for surgery only if tissue sequestra are found in the area occupied by the contrast medium, or if there is a bulging of the edges of the rupture. If these conditions are absent, no abnormal findings are to be expected on operation, even if there has been radiating pain on puncture; in these cases treatment should be conservative. In verified disk prolapse, puncture may demonstrate a degenerated disk but no rupture; those are the degenerated disks with local posterior bulging (concealed disks).

Subtotal Adrenalectomy for Cushing's Syndrome.—Walters and associates have performed subtotal adrenalectomy for Cushing's syndrome in 46 patients. There were six deaths among the 29 patients operated on before January, 1951, but only one among the 17 patients since operated on. All the 46 patients presented clinical and laboratory findings indicative of Cushing's syndrome, mostly in a severe form. Of the 23 living patients of the first group of 29 patients, 19 had excellent remissions from Cushing's syndrome to date. The results obtained in the last group of 17 patients will be reviewed later. Preparation of patients for operation by the administration of adrenal cortex extracts is important. In the last 25 cases cortisone was used in preoperative and postoperative care. As a rule 200 mg. of cortisone acetate was given intramuscularly 48 to 24 hours before operation as well as the morning of the operation. In this way, the postoperative shock-like reaction has been averted in all but one of the cases. The author and his colleagues believe that about 90% of one adrenal gland should be removed and total adrenalectomy should be performed on the opposite side, if satisfactory results are to be expected. After subtotal adrenalectomy patients must be kept under constant clinical and chemical surveillance, particularly when basal requirements of cortisone or adrenal cortex extract or both are being determined. Serum potassium and sodium levels should be determined. Also reduction in the daily doses of cortisone should be studied with the utmost caution and with the realization that the amount of adrenal tissue allowed to remain may degenerate from lack of vascularity soon after operation, and hence replacement therapy may have to be continued constantly.

American Journal of Medical Sciences, Philadelphia

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Crystalline B_{12} Inhalation Therapy in Pernicious Anemia. R. W. Monto, J. W. Rebuck and M. J. Brennan.—p. 113.
*Total Serum Cholesterol, Cholesterol-Lipid Phosphorus Ratio, and S_f 12-20 Concentration in Hypertension, Diabetes, and Coronary Artery Disease. L. B. Katz, G. J. Rhodes, R. S. George and C. Moses.—p. 120.
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*Infectious Hepatitis in Pregnancy. L. G. Roth.—p. 139.
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Preservation of Whole Blood and Red Cells. H. A. Sloviter.—p. 197.
Retinal Micro-Aneurysms. H. P. Wagener.—p. 205.

Serum Cholesterol, Lipid Phosphorus, and S_f 12-20 Lipoproteins.—Variations in total serum cholesterol, S_f 12-20 lipoprotein concentration, and cholesterol-lipid phosphorus ratio were studied in a series of patients with findings of hypertension, diabetes, and coronary artery disease, and a control group of normal subjects. The data obtained show no significant difference in the mean total cholesterol values found in either sex in any of these groups of patients. Wide variations in total

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Titles marked with an asterisk (*) are abstracted.

cholesterol value have commonly been found in both normal subjects and patients with hypertension, diabetes, and coronary disease, and this fact suggests a need for caution in interpreting the values obtaining in a particular patient. Data obtained on the S_f 12-20 lipoproteins failed to indicate any significant differences between the mean values in the men in the normal and patient groups, but the mean values for women with hypertension, coronary disease, and especially diabetes were significantly higher than those found for normal women. The wide range of values found in all groups sharply limits the diagnostic usefulness of this procedure also. The mean cholesterol-lipid phosphorus ratio in men with diabetes was significantly lower than that of normal men; no other significant variations were found, but again there was considerable overlapping in the range of values obtained. More accurate information on the significance of total cholesterol values, S_f 12-20 lipoproteins, and cholesterol-lipid phosphorus ratios in the pathogenesis of vascular disease will be required before their diagnostic importance can be established.

Infectious Hepatitis in Pregnancy.—Infectious hepatitis is a common viral disease to which the entire population is susceptible. The infection is usually transmitted by the oral-intestinal-fecal route, but transfusions of blood and plasma may also be responsible for its appearance. Many blood donors have chronic hepatitis without clinical symptoms and others may be carriers. The mere elimination of donors with a history of jaundice is inadequate as a preventive measure. The true incidence of infectious hepatitis in pregnancy is unknown, but indications are that it is fairly common. Many gastrointestinal complaints that are dismissed as functional or psychogenic may in reality be due to mild attacks of infectious hepatitis. The course of hepatitis in pregnancy does not differ from its course in general, and recovery is usually complete. Spontaneous abortion and premature labor may occur as with any severe constitutional disease or prolonged febrile illness. Interruption of the pregnancy is contraindicated, and additional stress resulting from operation, trauma, or anesthesia may prove fatal. A high protein and carbohydrate diet is essential and the intake of B-complex vitamins should be liberal. The prognosis is better for patients who have received an adequate diet before infection than for those whose nutrition has been poor. The use of corticotropin may prove life-saving if surgical treatment becomes necessary. Gamma globulin gives passive immunity from infectious hepatitis and may also give a passive-active immunity; consequently, it might be used as a prophylactic measure during a known epidemic. Attention to dietary, metabolic, and electrolytic requirements is the most important therapeutic consideration. There is no evidence to show that infectious hepatitis causes any anomalies or defects in the fetus.

Treatment of Acute Hypotensive States with *l*-Arterenol.—Arterenol (levophed®) was administered to 22 patients in acute peripheral circulatory collapse from various causes with particular emphasis on the treatment of shock complicating myocardial infarction and pulmonary embolism. Solutions of *l*-arterenol were prepared by adding 4.0 mg. of 1:1,000 arterenol to 1,000 cc. of 5% glucose in water. The pressor effect produced by intravenous drip infusion determined the rate of administration; in a few cases when a satisfactory elevation of the blood pressure was not secured the concentration of the solution was increased by the addition to it of another 4.0 to 8.0 mg. of 1:1,000 arterenol. Treatment was started immediately after detection of the shock state in most cases and was designed to maintain the blood pressure at an optimum level. A definite pressor response bringing the blood pressure out of shock range was obtained in all but two cases. The use of the drug is believed to have been the most important single factor in saving the patient's life in seven cases. The outcome was poorest in patients suffering from "cardiogenic" shock. There were 13 deaths in all; four patients in whom a significant pressor effect was obtained died later from other causes, and nine patients died in spite of the fact that their blood pressure levels were maintained at a normal range. Administration of the drug was continued for from 4 to 74 consecutive hours in the seven patients who survived, and was suspended only when the patient was able to maintain his blood pressure in a normal range without it. One of these patients had such severe congestive heart failure complicated by a pulmonary embolus that intravenous infusion made her pulmonary edema worse; intramuscular administration of the drug was then tried, using levophed®-in-oil. The pressor effect was maintained just as effectively and the edema was controlled more successfully by this means. Failure to insure the patency of the vein during administration may have serious consequences, because, if extravasation occurs, it may be difficult to find another suitable vein and because the pressor effects of arterenol are dissipated rapidly when it is discontinued. The only satisfactory guide to dosage is that provided by observation of the effect produced. Caution must be used in administering arterenol to patients already in congestive heart failure or those with mitral stenosis, because of the possibility that pulmonary edema may be produced or aggravated. Arterenol, unlike epinephrine, does not produce central nervous system stimulation with associated anxiety and discomfort. It is also eight times less toxic than epinephrine. The adrenal cortical hormones and the antihistamines potentiate its pressor effects, and the significance of this finding is now being investigated.

American Journal of Ophthalmology, Chicago

36:1-168 (Jan.) 1953

Macular Lesions of Vascular Origin: II. Functional Vascular Conditions Leading to Damage of Macula Lutea. B. A. Klien.—p. 1.
Postoperative Care of Retinal Detachment. J. W. Jervey.—p. 25.
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*Ultrasound Therapy of Painful Post-Operative Neurofibromas. I. Tepperberg and E. J. Marjey.—p. 27.
Ultrasonic Energy as Applied to Medicine. K. G. Wakim.—p. 32.

Ultrasound Therapy of Painful Postoperative Neurofibromas.—This is a preliminary report on experiences with ultrasound therapy in a small series of painful neuromas, four in amputation stumps and one in a postoperative scar. Most of these patients had received other forms of therapy, including nerve resections for painful neuromas, revisions of stumps, and numerous physical therapy modalities that had proved ineffectual or only partially effective. The ultrasonic machine employed in these patients has an energy density of 0.5, 1.0, 1.5, 2.0, 2.5 and 3.0 watts per square centimeter. The treatment head has a surface area of 5 sq. cm. and the frequency is 1,000,000 per second. The energy output can be used continuously or pulsed 1:5, 1:10, or 1:20. Dramatic relief of symptoms was obtained in four of the five patients. The unsuccessfully treated patient had a personality disorder, which makes an evaluation of any treatment difficult. In addition, he complained primarily of a phantom type of pain which might have its origin in the central nervous system and not locally. Ultrasonic radiation appears to have an almost specific action on painful neuromas. There were no harmful effects from ultrasonic radiation in any of these patients. Since the number of cases was small and since no adequate follow-up could be made, the authors intend to continue their studies on ultrasound therapy in painful neuromas.

American Journal of Physiology, Washington

171:513-792 (Dec.) 1952

Effect of Atropine, Tetraethylammonium, Banthine and Bentyl on Motility of Small Intestine. D. W. Northup, J. C. Stickney and E. J. Van Liere. —p. 513.

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Thermal Destruction of Mycobacterium Tuberculosis var. Bovis in Certain Liquid Dairy Products. H. N. Bundesen, T. F. Danforth, H. Woolley and E. C. Lehner.—p. 185.

Speech and Hearing in Public Health Program. J. Sabloff and L. L. Horne.—p. 204.

Eating Utensil Sanitation.—With the advent of radioisotopes means became available to obtain much more precise quantitative information about the extent of adsorption and retention of bacteria on different types of surfaces of eating utensils. In the studies herein reported, the bacterial cleanability of glass, china, steel, plastic, and aluminum have been determined, using as a means of investigation P^{32}-tagged bacteria. Of the bacteria studied, Micrococcus aureus was most difficult to remove from a given surface. Escherichia coli was the easiest to remove. Percentage of M. aureus removed in the absence of soil from china, glass, and steel surfaces, with standard detergency and temperature conditions, was between 97% and 99+%. Under similar conditions, removal of the same organism from plastic and aluminum surfaces was between 56 and 84%. In the case of plastic eating surfaces, a large variation existed among the different types. With Esch. coli, in the absence of soil, the removal efficiency varied between 99 and 99+% for china, glass, and steel and between 90% and 98% for plastic and aluminum. When the bacteria were overlaid with the organic soil, efficiency of removal from plastic surfaces dropped quite markedly in relation to china, glass, and steel. When plates were worn or scratched, removal efficiency decreased for all surfaces, but the same relation existed between different surfaces as with the unworn surfaces. In respect to bacterial film build-up from repeated bacterial soiling and washing, the plastic surfaces exhibited a soil build-up many times that of china before saturation was reached.

American Review of Tuberculosis, New York

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*Tumors of Renal Pelvis: Review of 47 Cases. C. C. Higgins.—p. 195.

*Free Autogenous Vein Graft to Internal and Common Carotid Arteries in Treatment of Tumors of Neck. J. J. Conley.—p. 205.

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Neurogenic Erosions of Stomach and Esophagus. A. B. King and J. C. Reganis.—p. 236.

Volvulus of Cecum as Postoperative Complication: Report of Six Cases. G. L. Jordan Jr. and O. H. Beahrs.—p. 245.

Postcholecystectomy Syndrome. D. V. Troppoli and L. J. Cella Jr. —p. 250.

Prepubertal Malignant Melanoma. K. F. Truax and H. G. Page.—p. 255.

Spontaneous Expulsion of Sequestrated Ileum: Report of Recovery in Two Adults. C. D. Benson, W. S. Carpenter and R. D. Swedenberg. —p. 261.

Subcutaneous Beryllium Granulomata of Hand. J. E. Flynn.—p. 265.

Intraperitoneal Mercury Granuloma. G. F. Crikelair and T. Hiratzka. —p. 272.

Tumors of Renal Pelvis.—Higgins reviews observations on 47 patients with tumors of the renal pelvis observed at the Cleveland Clinic. He noted an incidence of one such tumor in 10,138 new registrants, and he also found that the tumors of the renal pelvis accounted for 8.19% of all renal tumors. On the basis of Ewing's classification, 7 of the tumors were squamous cell carcinomas, 8 were benign papillomas, and 32 were papillary carcinomas. Thirty-three of the 40 papillary tumors occurred in men. The diagnosis and treatment in the 47 cases are discussed, and the reports of other investigators are cited. Unless widespread metastasis is demonstrable, a renal tumor warrants surgical intervention. Seven patients operated upon for squamous cell carcinoma, in which a nephrectomy was performed, all died. One patient lived for 168 months before succumbing to metastasis. Nephroureterec-

tomy and segmental resection of the bladder was performed in six patients with papillomas of the renal pelvis and six patients with papillary carcinoma. Nephroureterectomy and segmental resection of the bladder plus roentgen therapy was the procedure of choice in 11 patients with papillary carcinoma of the renal pelvis. A nephrectomy was performed in five patients with papillary carcinoma not permitting the more extensive surgical intervention. Nephrectomy plus roentgen therapy was employed in six additional cases of papillary carcinoma and two cases of papillomas of the renal pelvis. Roentgen therapy was instituted in two instances, and no treatment was instituted in one case. There were four postoperative deaths, two due to coronary disease, one to empyema of the gallbladder, and one to pneumonia. Higgins concludes that nephroureterectomy plus segmental resection of the bladder is a surgical procedure of choice for papillomas and papillary carcinomas of the renal pelvis. The prognosis for papillary carcinoma is more favorable in the absence of involvement of the renal veins, the perineural lymphatics, and the ureter and bladder. Nephrectomy suffices for squamous cell carcinoma of the renal pelvis, although the prognosis is grave. Early diagnosis is essential in improving the end results for these types of tumors. Two of the cases of papillary carcinoma in this series were diagnosed by examining the urinary sediment, secured by ureteral catheter drainage, by means of Papanicolaou's technique.

Free Autogenous Vein Graft to Carotid Arteries in Treatment of Neck Tumors.—The extremely high mortality and incidence of hemiplegia associated with ligation or excision of the carotid bulb in the treatment of tumors of the neck is the result of interference with the blood supply of the brain. Conley feels that autogenous vein graft anastomoses should be considered in every healthy, noninfected neck wound when the treatment of primary tumors such as the carotid body tumors or metastatic tumors in the neck have required excision of the common and internal carotid arteries. Allied conditions such as trauma with rupture of the carotid artery, aneurysmal dilatations of the carotid complex, and arteriovenous aneurysm of the carotid artery, should certainly be considered as requiring an autogenous vein graft. The technique of anastomosis of a free autogenous vein graft of the common and internal carotid arteries is governed by the indications warranting the anastomosis. The vein graft is procured after an evaluation of the size and length of the excised carotid artery. The superficial femoral vein is usually most satisfactory, but occasionally the great saphenous vein may be used. The technique of vein grafting and possible complications are discussed, and the histories of 11 patients undergoing such grafts are described. Three patients in whom the wound was not infected and who had not had irradiation treatment tolerated the grafting operation and are well. One patient, whose graft survived implantation into a potentially infected wound, died five months later of a coronary occlusion. Another patient, whose graft survived implantation in a potentially infected antd heavily irradiated area, died in the third postoperative month of generalized metastasis. One patient, whose graft survived implantation in a potentially infected and heavily irradiated wound for the treatment of cancer, is living and well. Five patients, whose wounds were grossly infected, manifesting postirradiation necrosis, died within two weeks of their operations; one aspirated vomitus, another had a hemorrhage due to rupture of the anastomosis, and the three others had thrombosis of the vein graft. In two cases, preoperative hemiplegias were cured after the implantation of the vein graft, but in one of these, the graft thrombosed and the hemiplegia recurred several days before death. In the other patient, there was progressive degeneration and thrombus formation of the vein graft, which probably would have progressed to total thrombosis had not the patient died of heart failure and pneumonia. A free autogenous vein graft has considerably less chance of success when used in an infected or necrotizing postirradiated wound than in a surgically clean wound. Further investigation is needed so that those requiring free vein grafting will not be denied this procedure and those not requiring it will not be exposed unnecessarily to this formidable procedure.

Cancer Research, Chicago

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Enzymatic Deamination of 8-Azaguanine in Normal Human Brain and in Glioblastoma Multiforme. E. Hirschberg, M. R. Murray, E. R. Peterson and others.—p. 153.
Combined Effects of Cortisone and Roentgen Radiation Upon Natural and Induced Resistance to Homoiotransplantation of Mouse Leukemia, Line Ib. A. A. Werder, J. Friedman, E. C. MacDowell and J. T. Syverton.—p. 158.
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Studies on Tissue Metabolism by Means of In Vivo Metabolic Blocking Technics: II. Metabolism of Acetate-1-C^{14} in Malonate-Treated Rats. H. Busch and V. R. Potter.—p. 168.
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Endocrinology, Springfield, Ill.

52:1-122 (Jan.) 1953. **Partial Index**

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Quantitative Method of Determination of Diabetogenic Activity of Growth Hormone Preparations. J. Mayer and D. N. Silides.—p. 54.
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Florida Medical Association Journal, Jacksonville

39:553-622 (Feb.) 1953

Leprosy in Florida. L. F. Badger.—p. 573.
*Use of Cortisone and ACTH in Case of Eclampsia. W. M. Howdon and B. L. Ludwig.—p. 578.
*Typhoid Carriers. W. A. Walter.—p. 580.
Scientific Critique of Progress in County Health Unit. P. W. Hughes.—p. 582.
Our Midwife Problem. C. L. Brumback.—p. 585.
Mental Deficiency. W. L. Musser.—p. 589.

Cortisone and Corticotropin in Eclampsia.—In giving cortisone and corticotropin to moribund eclamptic patients Howdon and Ludwig gained the impression that cortisone alone has a beneficial effect when given during the stage of adrenal exhaustion. They stress that laboratory and clinical studies must be made and the electrolyte and fluid balance must be maintained at all times. Experience in the case described and in other cases encourages them to resort to treatment with cortisone in patients with eclampsia, particularly when they are in a state of circulatory collapse.

Typhoid Carriers.—In about 50% of cases of typhoid the patients continue to discharge typhoid bacilli in the feces for three weeks after the onset of the disease, and about 5% are still discharging the organisms after 11 to 13 weeks. At the end of five months, the figure has decreased to about 3%. Persons in this group are known as convalescent carriers. A

chronic carrier is a person who discharges typhoid bacilli 12 months or more after infection. Older persons are more likely to become carriers than children. The highest frequency (about 15%) occurs in women aged 40 to 49 years. To detect typhoid carriers so that they can be placed under adequate surveillance is one of the most important problems in the control of typhoid. Because of the limitations of cultural method of detection, many workers have explored the use of serologic methods for screening tests. It was shown by Felix and others that in chronic carriers the frequency of a positive Vi reaction in the serum was especially high. Many workers, however, have had serious reservations concerning the specificity and sensitivity of the reaction and the stability of the Vi antigen. In 1951 Saint-Martin and others in Montreal described a Vi agglutination test that they believed presented unusual qualities of antigenic stability, specificity, and sensitivity. The technique of the Montreal workers was used for studies by the laboratories of the Florida State Board of Health. These studies indicated that the presence of Vi agglutinins is not diagnostic of the carrier state; however, it is clear that the serum of probably over 90% of chronic typhoid carriers contains Vi agglutinins. The authors regard the test as an efficient screening test which, if giving positive results, should be followed by numerous examinations of urine and feces in an effort to isolate S. typhosa.

Iowa State Medical Society Journal, Des Moines

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Some Common Obstetrical Problems and Their Management. D. L. Long.—p. 45.
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Cancer Prevention Applied to Carcinoma of Colon. R. J. Jackman.—p. 94.
Early and Late Complications of Head Injuries. W. D. Abbott.—p. 95.
Management of Gastrointestinal Hemorrhage. T. F. Thornton Jr.—p. 99.
Venereal Disease Control Program in Iowa. R. H. Heeren, L. Dippert, A. Gelperin and W. D. Plude.—p. 101.
Case Report of Synovioma. J. H. Sunderbruch.—p. 105.

Journal Clin. Endocrin. & Metab., Springfield, Ill.

13:139-242 (Feb.) 1953

Influence of Chorionic Gonadotropin on Human Ovarian Hilus Cells (Leydig-Like Cells). W. H. Sternberg, A. Segaloff and C. J. Gaskill.—p. 139.
*Remission in Cushing's Syndrome After Bilateral Hemiadrenalectomy. H. S. Kupperman, A. Bernstein, A. P. Forbes and others.—p. 154.
Variations in Potency of ACTH Preparations: Inadequacy of Present Methods of Standardization. M. A. Ogryzlo and A. G. Gornall.—p. 165.
Some Effects of Adrenocorticotropic Hormone in Various Hypo-Ovarian States. II. Primary Amenorrhea, Surgical Castration, and the Menopause. M. E. Davis, C. E. Test, C. A. Navori, and others.—p. 181.
Metabolic and Clinical Effects of Methylandrostenediol in Human Subjects. J. W. Partridge, L. Boling, L. DeWind and others.—p. 189.
Studies on Validity of Hooker-Forbes Test for Determination of Progesterone in Untreated Blood. M. X. Zarrow and G. M. Neher.—p. 203.
Instrumentation for Thyroid Measurement. G. L. Brownell and J. B. Stanbury.—p. 210.
Simplified Technique for Diagnosis of Hyperthyroidism, Utilizing the One-Hour Uptake of Orally Administered I^{131}. K. R. Crispell, W. Parson and P. Sprinkle.—p. 221.

Remission of Cushing's Syndrome After Bilateral Hemiadrenalectomy.—At the age of 11 a girl who had always been somewhat short and "dumpy" ceased growing and gained weight rapidly. A diagnosis of pituitary basophilism was made and the girl received three courses of x-ray treatment to the pituitary. Roentgenograms of the skull at that time showed evidence of an infantile sella. There was not much change six months after x-ray therapy. At this time her appearance was suggestive, but not typical of, Cushing's syndrome. On the basis of various laboratory tests, it was now decided that the girl had hypothyroidism rather than Cushing's syndrome. Thyroid therapy and a diet low in fat and starch resulted in a considerable loss in weight. On the basis of various hormone assays, gonadal hormones were given and she had some menstrual periods, but her weight increased again, while her height showed little change. Finally, the diagnosis of Cushing's syndrome was established on the basis of the following observations: obesity with moon face and buffalo hump, plethora, moderate hypertension, abdominal striae, a thin skin that was easily bruised, hirsutism, acne, hyperkeratosis, amenorrhea, and an uncooperative attitude. Bilateral subtotal adrenal resection was performed at the age of 17 years. The adrenals were not so definitely enlarged at operation that they could be identified as hyperplastic; they appeared normal on routine histological examination; 50% of the left and 60% of the right adrenal were removed. Nevertheless, despite the gross and microscopic appearance of the two adrenals, any doubt that adrenal function was abnormal was dispelled by the clinical improvement after subtotal resection. The patient has now been observed for two years postoperatively and has no signs or symptoms of Cushing's syndrome. Growth, which had ceased abruptly with the onset of Cushing's syndrome, was resumed following subtotal adrenalectomy. The authors point out that since Cushing's syndrome has been produced with cortisone there is no longer any doubt that it is a form of hyperadrenocorticism. The fact that it can also be produced by corticotropin shows that this hyperadrenocorticism, in turn, can be a manifestation of a hyperpituitarism, and it has also been suggested that this hyperpituitarism is sometimes due to disorder of the hypothalamus. It follows that treatment might be directed at any one of the following four levels: hypothalamus, pituitary, adrenal, and the tissues which constitute the end-organ. The least innocuous and most conservative measures should be tried first, and surgery should be postponed until medical treatment has failed. However, this can be justified only if operable adrenal cancer is ruled out.

Journal of Investigative Dermatology, Baltimore

20:67-170 (Feb.) 1953

Experimental Production of Leukocytic Changes in Normal Blood Similar to LE-Cells and Morphologically Identical with LE-Cells. T. Inderbitzin.—p. 67.
*Lesions of Mucocutaneous Junctions in Rat in Deficiency of Pyridoxine. V. Ramalingaswami and H. M. Sinclair.—p. 81.
Studies of Thorium X Applied to Human Skin: II. Comparative Findings of Penetration and Localization of Thorium X When Applied in Alcoholic Solution, in Ointment and in Lacquer Vehicles. V. H. Witten, M. S. Ross, E. Oshry and V. Holmstrom.—p. 93.
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Studies on Sulfhydryl Content of Skin. E. J. Van Scott, S. Rothman and C. R. Greene.—p. 111.
Effect of Cold Stress, ACTH, Cortisone, Pyrogen, and Nitrogen Mustard on Tissue Mast Cells in Skin and Subcutaneous Tissues of Rat. E. P. Schoch Jr. and D. Glick.—p. 119.
An Unusual Acid-Fast Infection of Knee with Subcutaneous, Abscess-Like Lesions of Gluteal Region: Report of Case with Study of Organism, Mycobacterium Abscessus, n. sp. M. Moore and J. B. Frerichs.—p. 133.

Lesions of Mucocutaneous Junctions in Pyridoxine Deficiency.—The junctions of the skin and mucous membranes have been known to be vulnerable sites of affection in nutritional deficiencies since Stannus in 1912 described lesions of the angles of the mouth, lips, nose, eyelids, and anogenital region in pellagra patients in Nyasaland. Subsequently, numerous reports have appeared from different parts of the world of similar lesions both in association with and independent of pellagra, but their exact relationship to specific nutritional factors remained obscure until Sebrell and Butler in 1938 reported the production of these lesions in human volunteers fed a diet deficient in riboflavin. For a time these lesions were regarded as pathognomonic of riboflavin deficiency, but soon investigators reported cases of angular stomatitis and cheilosis that were resistant to riboflavin therapy but were improved by pyridoxine. After citing additional literature reports, the authors of this paper describe experiments on albino rats from which they draw the following conclusions: 1. Lesions of the nose, lips, angles of the mouth and less frequently of the eyelids and anogenital region were observed in rats deficient in pyridoxine and their gross and microscopic features were studied. 2. The changes in the mucocutaneous junctions were similar to the characteristic lesions of the paws. 3. Complete reversal of the changes resulted from the administration of pyridoxine. 4. It is concluded that pyridoxine is essential for the integrity of the mucocutaneous junctions in the rat as may well be the case in man. 5. Involvement of the ears is a late and inconstant feature of deficiency of pyridoxine in the rat.

Journal Lab. and Clinical Medicine, St. Louis

41:169-336 (Feb.) 1953

Erythrophagocytosis: Standardization of Quantitative Tissue Culture Test and Its Application to Hemolytic, Malignant, and Infectious Diseases. C. S. Wright, M. C. Dodd, N. G. Brandt and others.—p. 169.
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Effect in Man of New Heparinoid, Treburon. J. B. Field, G. D. Ramsay, A. M. Attyah and P. Starr.—p. 208.
Blood Serum Magnesium in Portal Cirrhosis and Diabetes Mellitus. F. L. Stutzman and D. S. Amatuzio.—p. 215.
Further Observations on Use of Urinary Pigment-Creatinine Ratio for Measurement of Basal Metabolic Rate. J. J. Vorzimer, I. B. Cohen and J. Joskow.—p. 220.
Quantitative Measurment of Vibratory Perception in Subjects With and Without Diabetes Mellitus. I. A. Mirsky, P. Futterman and R. H. Broh-Kahn.—p. 221.
Biochemical Changes in Serum and Feces During Ingestion of Carboxylic, Sulfonic, and Anion Exchange Resins. L. Greenman, W. A. Frey, R. E. Lewis and others.—p. 236.
Estimation of Gamma-Globulins in Normal and Myelomatous Plasmas by Chemical Fractionation. A. L. Kaitz, E. H. Kass, W. H. MacMillan and F. H. L. Taylor.—p. 248.
Plasma and Erythrocyte Sodium and Potassium Concentrations in Group of Southern White and Negro Blood Donors. W. D. Love and G. E. Burch.—p. 258.
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Metabolism of Water and Electrolytes in Congestive Heart Failure. I. Electrolyte and Water Content of Normal Human Skeletal Muscle. P. J. Talso, N. Spafford and M. Blaw.—p. 281.
Cerebrospinal Fluid Sodium Values in Essential Hypertension. L. L. Johnson, C. W. Shaw, W. P. Galen and H. L. Holley.—p. 287.

Journal of the Student A. M. A., Chicago

2:1-82 (Feb.) 1953

Pulmonary Arteriovenous Fistula. G. E. Aponte.—p. 19.
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Pleuropneumonia-Like Organisms in Urinary Tract Infections. P. R. Leberman and H. Morton.—p. 25.
Physician's Responsibility in Cancer Control. F. L. Rector.—p. 28.

Military Surgeon, Washington, D. C.

112:79-156 (Feb.) 1953. **Partial Index**

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New England Journal of Medicine, Boston

248:267-308 (Feb. 12) 1953

*Epidemic Pleurodynia in Texas: Study of 22 Cases. R. J. Huebner, J. A. Risser, J. A. Bell and others.—p. 267.
Roentgenologic and Clinical Aspects of Hyperphalangism (Polyphalangism) and Brachydactylism: Hereditary Abnormal Segmentation of the Hand. M. I. Shoul and M. Ritvo.—p. 274.
Prolonged Cardiac Pain Following Intra-Arterial Injection of Priscoline: Report of Case. E. L. Sagall and H. J. Lewenstein.—p. 278.
Adams-Stokes Syndrome Due to Ventricular Fibrillation and Tachycardia. S. J. Berte and A. T. Smith.—p. 282.
Pharmacologic Aspects of Adrenocortical Steroids and ACTH in Man. G. W. Thorn, D. Jenkins, J. C. Laidlaw and others.—p. 284.
Clinical Application of Simple Qualitative Serum Acetone Test in Diabetes Mellitus. O. C. Page.—p. 295.

Epidemic Pleurodynia in Texas.—Although the evidence suggesting a causal relation between certain group B Coxsackie viruses and epidemic pleurodynia (also known as Bornholm disease, epidemic myalgia, or devil's grippe) appears to be stronger than that linking these viruses with poliomyelitis, aseptic meningitis, or poliomyelitis-like illness, the published data supporting this hypothesis are based almost exclusively on the study of sick persons. Huebner and associates believed that it would be desirable to study epidemic pleurodynia during outbreaks, when it would be possible to examine sick and healthy persons in the same community. This was possible during an outbreak of pleurodynia in northeastern Texas in the late summer of 1951. An epidemiological study of a community of 700 persons, 65 of whom either were ill with epidemic pleurodynia or gave histories of recent attacks will be described later. This paper is concerned with the isolation of Coxsackie viruses in suckling mice from the stools of persons with epidemic pleurodynia. The recovery of Coxsackie virus B3 from the stools of 16 of 22 persons with symptoms of epidemic pleurodynia, together with evidence of antibody responses indicates that this virus was the etiological agent responsible for the outbreak of that disease in northeastern Texas. The recovery of Coxsackie virus A1 from four patients, one of whom probably had herpangina and two of whom also harbored B3 virus, could not be interpreted as having etiological significance in epidemic pleurodynia. This virus (A1) is known to be so prevalent that its occurrence under these circumstances was not unexpected. The fact that this agent was the first to be encountered in these studies illustrates clearly the fallacy of deducing etiological importance whenever a prevalent virus is demonstrated in persons selected because they have a prevalent illness.

Oklahoma State Medical Assn. J., Oklahoma City

46:1-24 (Jan.) 1953

Regional Enteritis Isolated to Jejunum: Report of Two Cases. B. J. Rutledge and B. E. Mulvey.—p. 4.
Increasing Incidence of Coronary Arteriosclerosis in Diabetes Mellitus: Preliminary Manuscript. H. F. Root and K. M. West.—p. 6.
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Peritoneal Bands of Non-Surgical Origin. J. G. Matt.—p. 29.
Pancreatic Cysts. E. H. Kalmon Jr.—p. 33.
Tinea Capitis Due to Trichophyton Schoenleini (Favus): Report of Six Cases in Oklahoma. P. O. Shackleford, R. J. Morgan, C. J. Young and J. H. Lamb.—p. 41.

Pediatrics, Springfield, Ill.

11:89-190 (Feb.) 1953

Chemotherapeutic Aspects of Studies on Bacterial Viruses. S. S. Cohen.—p. 89.
Hitherto Unrecognized Biochemical Difference Between Human Milk and Cow's Milk. P. György.—p. 98.
Galactocele in Male Infant. S. P. Bessman and J. C. Lucas.—p. 109.
*Herpangina: Clinical and Laboratory Aspects of an Outbreak Caused by Group A Coxsackie Viruses. L. P. Kravis, K. Hummeler, M. M. Sigel and H. I. Lecks.—p. 113.
*Function of Adrenal Cortex in Premature Infants. I. Infants Without Recognized Disease. J. T. Lanman.—p. 120.
Alymphocytosis. W. L. Donohue.—p. 129.
Transient Diabetes in Infancy. S. L. Arey.—p. 140.
Epidemic Shigella Gastroenteritis (Bacillary Dysentery) in an Endemic Area. II. Age-Specific Clinical Aspects. M. Feig.—p. 145.

Herpangina.—Several small outbreaks of herpangina in Philadelphia during the summer of 1951 are described. Coxsackie group A viruses of three different immunologic types were isolated from stools or throat swabs, or both, obtained from 17 of the 21 children involved in the outbreaks. The causal relationship between certain Coxsackie group A viruses and the disease entity herpangina first reported by Huebner and coworkers in 1951 thus was confirmed. A rise in complement-fixing and neutralizing antibody titers against homologous virus strains during convalescence was demonstrated in 3 of the 17 patients. The causal relationship of the recovered viruses to herpangina was further suggested by failure to isolate Coxsackie virus from throat swabs taken from 22 patients with nonspecific mouth lesions, fevers of unknown etiology, or neurological illnesses suggestive of nonparalytic poliomyelitis. The circumstances under which two children of one of the authors simultaneously developed herpangina suggest that an inapparently infected laboratory worker or other adult can transmit the virus to children. The same immunologic type of Coxsackie virus, i. e., H_3, which was isolated from the first patient in this group was also recovered from the asymptomatic investigator and her two children with herpangina. To date only herpangina and epidemic pleurodynia definitely seem to be related causally to the Coxsackie viruses. When herpangina is suspected, laboratory confirmation of the diagnosis

requires isolation of virus from the throat lesions. Demonstration of a rising antibody titer to the isolated virus adds further confirmatory evidence. When the virus is recovered from the stool alone or when no virus is recovered or when only a serologic response to a Coxsackie virus strain is demonstrated, the laboratory data would be considered insufficient for diagnosis. More thorough clinical and laboratory studies on herpangina should help to clarify the role of the group A Coxsackie viruses in the production of herpangina and other diseases in man.

Function of Adrenal Cortex in Premature Infants.—According to Lanman, the adrenal gland is prominent throughout fetal life and is composed largely of a zone of tissue which abruptly involutes and disappears after birth during the first three weeks of life. It has been suggested that this fetal zone performs one of the functions of the adult-type cortex. In an attempt to determine whether it produces corticosteroids, 125 determinations of formaldehydogenic steroids were made on urine from eight premature infants without recognized disease during their first 64 days of life. Results showed that urinary formaldehydogenic steroid excretion did not change measurably during the first 10 days of life, and was not significantly different from adult normal values when compared on a surface area basis. Calculations from the data of other investigators indicate that infant values are from one to five times those of adults when compared by surface area. Urinary formaldehydogenic steroid excretions rose significantly with age when the entire period of study for all infants was included. This rise occurred during the period of fetal cortical involution and is evidence that the fetal zone is not an important source of formaldehydogenic steroids. A balance study for sodium, potassium, and nitrogen was carried out in one infant. It revealed a loss of potassium in the first two days of life which was disproportionately greater than the loss of nitrogen during the postnatal fasting period. The formaldehydogenic steroid excretion did not change measurably at this time, so that the study does not support the concept of changed adrenal function as a cause for this potassium/nitrogen disproportion. The electrolyte-regulating hormones can, however, vary independently of other adrenal functions. Acute inanition in the neonatal period of fasting is suggested as a possible cause for the disproportion.

Postgraduate Medicine, Minneapolis

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Intestinal Obstruction. W. C. MacKenzie.—p. 194.
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Effects of Early Postoperative Ambulation. L. T. Palumbo, R. E. Paul, I. A. Katz and T. T. Mazur.—p. 206.
*Serum Neuritis: 20 Cases Following Use of Antitetanic Serum. J. L. Garvey.—p. 210.
Early Recognition of Bronchogenic Carcinoma. A. Ochsner.—p. 214.
Technics in Diagnosis of Neuroses. J. R. Peters.—p. 221.
Recent Developments in Sickle Cell Anemia. R. D. Mercer.—p. 224.
Granulomas with Tissue Eosinophilia (Eosinophilic Granulomas). E. P. Cawley and C. E. Wheeler.—p. 228.
Changing Medical Scene. (Presidential Address, Cleveland Assembly). C. C. Sturgis.—p. 274.

Serum Neuritis Following Use of Antitetanic Serum.—A 38-year-old man had been given 1,500 units of antitetanic serum for prophylaxis when about 80 porcupine quills had entered his right foot. Nine days later there was severe pain in his right shoulder and marked spasm in the muscles of the neck and shoulder girdle, necessitating hospitalization. The attending physician, believing that he might have tetanus, gave him additional antitetanic serum. He became gravely ill as the result of serum sickness. Gradually the pain and tenderness subsided, and it was then noted that he had a marked weakness about the shoulder girdle. When the author saw the patient, he still had weakness on elevation of the right arm, the bony landmarks about the shoulder were more prominent on the right side than on the left, he had a sensation of tingling in the arm, there were occasional fibrillary tremors in the region of the left deltoid muscle, and diminished superficial sensation was noted in a small area over the right deltoid area. The author, recalled 20 similar cases of unexplained local and generalized neuritis that he concluded were examples of antitetanic serum neuritis. Trivial injuries and prophylaxis with antitetanic serum are often forgotten by patients, and unless the physician is acquainted with the condition when an unexplained neuritis presents itself, the correct diagnosis will not be established. In only one of the 20 patients seen by the author had the diagnosis been definitely established. The neuritis was generalized in 6 cases and involved one or both shoulders in 10 cases. In connection with serum sickness, neuritis should be suspected if severe localized or general radicular pain appears early in the course. Usually this pain is so severe that any early paralytic features are masked and detection of the paralysis is delayed for weeks or months. The flaccid atrophic paralysis appears in the neural segments represented by the pain distribution. Despite the fact that this disabling type of neuritis is associated with the use of antitetanic serum, the author emphasizes that this should not alter the prophylaxis and treatment of tetanus. Many patients with a mild form probably recover without knowing that neuritis has complicated the serum sickness. Some form of permanent disability seems to result in about 20% of the cases. Complete recovery has been known to occur after 24 months.

Psychosomatic Medicine, New York

15:1-94 (Jan.-Feb.) 1953. **Partial Index**

Central Representation of Symbolic Process in Psychosomatic Disorders. L. S. Kubie.—p. 1.
Psychiatric Aspects of Pain. L. Rangell.—p. 22.
Emotional Stress in Precipitation of Congestive Heart Failure. W. N. Chambers and M. F. Reiser.—p. 38.
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Photically-Activated Electroencephalogram: Research Tool in Psychiatry: Preliminary Observations. G. A. Ulett.—p. 66.

Public Health Reports, Washington, D. C.

68:141-280 (Feb.) 1953. **Partial Index**

Effect of Fluoridated Public Water Supplies on Dental Caries Prevalence. F. A. Arnold Jr., H. T. Dean and J. W. Knutson.—p. 141.
"We Are in Danger of Building a Tower of Babel." V. Bush.—p. 149.
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Radiology, Syracuse, N. Y.

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Abdominal Arteriography: Review with Analysis of 17 Cases. D. Shapiro.—p. 1.
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Diagnosis of Volvulus of Cecum. H. L. Abrams and W. A. Wass.—p. 36.
Gastric Varices. J. A. Evans and F. Delany.—p. 46.
Benign Ulcer of Greater Curvature of Stomach. H. Feld and R. G. Olivetti.—p. 53.
Lesser Sac Hernia Via Foramen of Winslow: Case Report. C. V. Cimmino.—p. 57.
Radiologic Demonstration of Invaginated Intussuscepted Meckel's Diverticulum. B. B. Gay Jr.—p. 60.
Radiographic Features of Ureterocele. C. Gottlieb, S. L. Beranbaum and R. H. Hamilton.—p. 64.
Carcinoma of the Breast: Roentgenographic Technic and Diagnostic Criteria. J. Gershon-Cohen and H. Ingleby.—p. 68.
Cervical Radium Applicators with Screening in Direction of Bladder and Rectum. G. H. Fletcher.—p. 77.
Automatic Cassette Changer for Angiography. R. F. McClure, H. P. Doub and R. E. Shipley.—p. 85.

Rocky Mountain Medical Journal, Denver

50:83-156 (Feb.) 1953

*Syphilis—Course and Management. E. W. Thomas.—p. 105.
Challenge of Chronic Disease in 1952. J. H. Amesse.—p. 110.
Carcinoma of Prostate: Surgical Treatment. D. R. Higbee.—p. 113.
New Risks Bring New Insurance Forms: Part 2. L. A. Beck.—p. 116.

Syphilis: Course and Management.—In the last five years there has been a striking decrease in the incidence of early syphilis and mortality rates and admissions to mental hospitals attributed to syphilis have shown a marked decline. Much of this improvement can be attributed to penicillin which surpasses all previous antisyphilitic agents in safety and rapid effectiveness. Syphilis really represents two diseases, the acute

and chronic stages, which differ immunologically and pathologically. The author discusses the management of both forms. He summarizes the routine medical management of syphilis as follows: 1. Previously untreated patients with syphilis should be treated with penicillin. 2. Patients who have had previous treatment with irregular injections or undetermined amounts of metal therapy might well be re-treated with penicillin as a precautionary measure. 3. Relapses, as determined by serologic tests for syphilis, spinal fluid examinations or unquestioned clinical evidence, should be re-treated with higher doses of penicillin than those previously received. Only in rare cases will it be found necessary to resort to antisyphilitic agents other than penicillin unless the patient has become permanently sensitized to penicillin, in which case other antibiotics are to be preferred to arsenicals and bismuth. Patients should not be re-treated merely because of persistently positive serologic tests for syphilis. The continued presence of reagin in the serum of patients with well-treated syphilis is no more proof of an active infection than a positive tuberculin test is proof of active tuberculosis.

Southern Medical Journal, Birmingham, Ala.

46:95-206 (Feb.) 1953

Southern Medical Association, Its Past and Its Future. R. J. Wilkinson.—p. 95.
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Recurrent Pterygium. A. A. Nisbet.—p. 116.
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Roentgenologic Considerations of Gastro-Intestinal Lesions Causing Hematemesis. R. D. Moreton.—p. 127.
Recent Advances in Diagnosis and Treatment of Cerebral Vascular Accidents. E. Walker, W. W. Moore, J. R. Simpson and F. V. Kristoff.—p. 136.
Diagnostic Evaluation and Simple Technic for Removal of Varicose Veins. C. R. Doyle.—p. 143.
Granuloma Gangraenescens: Report of Case. V. Pardo-Castello, F. L. Blanco and R. Rivera del Sol.—p. 149.
Thorium-X in Dermatology. J. van de Erve Jr.—p. 155.
Cutaneous Papillomatosis, Pseudo-Acanthosis Nigricans, and Benign Acanthosis Nigricans. M. Waisman.—p. 162.
Organic Hyperinsulinism: Surgical Management. R. R. White.—p. 169.
Function and Morphology in Classification of Nephroses. P. Kimmelstiel.—p. 175.
Pre- and Postoperative Care in Proctology. R. F. Elkins.—p. 182.
Office Orthopedics. G. A. Caldwell.—p. 184.
An Introduction to the Problem of the Alcoholic. L. L. Weil.—p. 189.
Use of Antabuse® in the Alcoholic Problem. J. J. McAndrew.—p. 190.
Sexual Precocity: Case Report. R. G. Skinner Jr.—p. 194.

West Virginia Medical Journal, Charleston

49:51-70 (Feb.) 1953

Citizen Opportunities for Mental Health. S. W. Hamilton.—p. 51.
How Public Agencies can Help Solve Rural Health Problems. N. H. Dyer.—p. 55.
Office Care of Proctologic Disease. H. C. Schneider.—p. 57.
*Gonorrhea Control: Rational Approach. S. S. Lee.—p. 59.

49:71-94 (March) 1953

Malignant Melanoma of the Eye. A. C. Esposito.—p. 71.
Brain Fever and Sherlock Holmes. E. J. Van Liere.—p. 77.
Diagnosis of Appendicitis. P. Williamson.—p. 80.
Value of Morbidity Reporting. H. L. Marquis.—p. 82.

Gonorrhea Control.—Lee cites figures which indicate that while there has been a progressive reduction in the incidence of syphilis during the past nine years, since the advent of penicillin therapy, this has not been so with gonorrhea. A considerable disparity in male cases per 100 female cases exists in reported gonorrhea. The sex ratio of reported cases of syphilis for a similar period is consistently closer to what might be expected, namely, approximately equal numbers of male and female cases, since both diseases are spread largely through sexual intercourse. One of the apparent sources of failure to control gonorrhea is the small percentage of females presumably exposed to this disease who are brought to treatment. The reasons for this are (1) lack of symptoms in women with gonorrhea, (2) failure to obtain information on, and treat female contacts, and (3) difficulty in making a diagnosis of gonorrhea in women. The author feels, that since there is no simple means of making a diagnosis of gonorrhea comparable in reliability to standard serologic tests for syphilis, treatment of gonorrhea in women is best done on epidemiological evidence only. All women named as contacts by male patients with gonorrhea during a period slightly longer than the incubation period (about three weeks) should be treated. Gonorrhea should be treated with a dose of penicillin adequate for abortion of early syphilis, since this disease may have been acquired concomitantly, but may not yet have manifested itself due to its longer incubation period. At least 600,000 units of procaine penicillin aluminum monostearate in oil should be given as a single intramuscular injection. A serologic test for syphilis should be performed at the time of diagnosis, and the patient should be requested to return for a repetition of this test within three months after treatment.

Wisconsin Medical Journal, Madison

52:117-164 (Feb.) 1953

Desmoid Tumors. J. R. Steeper.—p. 117.
*Treatment of Acute Leukemia with Combined Steroid Hormones and Folic Acid Antagonists. G. E. Magnin, R. Rotter and O. O. Meyer.—p. 120.
Acute Urinary Retention in Pregnancy. W. J. Petters, L. W. Schrank, R. E. Schrank and W. A. Wagner.—p. 128.
Coxsackie Virus Infections in Northern Wisconsin. A. F. Rasmussen Jr., F. A. Cline and A. F. Borge.—p. 129.
Practical Methods for Diagnosis and Treatment of Emotional Illness. A. C. Washburne.—p. 133.
Study and Evaluation of 97 Selected Cases Seen at Otologic Clinics in Wisconsin Hearing Conservation Program. M. Bennett.—p. 137.

Treatment of Acute Leukemia with Combined Steroid Hormones and Folic Acid Antagonists.—Supportive measures such as blood transfusions and the use of antibiotics may prolong the life of patients with acute leukemia, but the outcome is invariably fatal. Antifolic acid compounds and steroid hormones used separately have been shown to influence the course of the disease. The effect of their combined administration was studied in 17 patients treated at the University Hospitals in Madison, Wis., between January, 1951, and May, 1952. No attempt was made to exclude patients who were critically ill or obviously in the terminal stage of their illness. The method of administering the antifolic acid compound, 4-aminopteroylglutamic acid (aminopterin®), varied with each patient, but basically both adults and children received 0.5 mg. of 4-aminopteroylglutamic acid for a period of from four to seven days in order to determine their sensitivity to the drug. The dose was then either increased to 1.0 mg. daily or reduced to 0.25 mg. daily depending on the response. It was continued for a minimum of 21 days unless untoward effects intervened. Concomitantly, the children were given 25 mg. of cortisone every eight hours for one week; 25 mg. every 12 hours for the second week; and 25 mg. daily for the third week, after which the drug was discontinued. The cortisone schedule for adults consisted of 100 mg. three times daily for three days, followed by a reduction of 25 mg. daily until they were receiving 25 mg. daily. Again the drug was discontinued after three weeks. Corticotropin, given according to the same dosage schedule as cortisone, was used in two children. One patient, a 3-months-old infant, died of a subdural hemorrhage two days after the treatment was begun; all the others experienced subjective improvement. A decline in the temperature accompanying a general sense of well-being was usually apparent in from 24 to 48 hours after the beginning of treatment; appetite and strength increased, and interest in the environment revived. The spleen was definitely decreased in size in nine patients, in six of whom it could no longer be palpated, and this decrease in size was usually associated with a regression of the hepatomegaly and lymphadenopathy. The objective changes ordinarily appeared from the 10th to the 17th day after treatment began. The average duration of life in the nine patients who exhibited a satisfactory response to the treatment was 7.4 months, as opposed to 1.1 month in the eight patients in whom the condition proved refractory; only one patient was still alive in June, 1952, and he showed signs of recurrent disease (anemia and splenomegaly). Evaluation of the therapy is sometimes very difficult, because the toxic manifestations of these drugs are occasionally indistinguishable from the clinical signs of the disease.

FOREIGN

Archiv f. Orthopädische und Unfall-Chirurgie, Munich

45:299-414 (No. 4) 1952. **Partial Index**

The Contracted Foot of the Adolescent and Results of Treatment. G. Imhäuser.—p. 323.
Fatigue Fracture as Manifestation of Mechanical and Biological Forces. G. Burdzik.—p. 334.
*Osteochondritis Coxae Juvenilis (Perthes' Disease) Following Reposition of Congenital Dislocation of Hip-Joint. H. Scheibner.—p. 343.
Animal Experiments on Problem of Angiogenic Callus Formation. R. Hasche-Klünder.—p. 355.
Therapeutic Results in 100 Torsion Fractures of Lower Leg. G. Meier-Stauffer.—p. 363.
Diagnosis and Treatment of Hip-Pain: I. Disturbances in Blood Perfusion in Region of Hip-Joint. F. Schmitz.—p. 379.
Pathogenesis and Etiology of Kyphosis in Adolescents. K. Idelberger. —p. 406.

Osteochondritis (Perthes' Disease) Following Reposition of Congenital Dislocation of Hip.—Changes in the head of the femur resembling or identical with osteochondritis coxae juvenilis (Perthes' disease) were found following repositioning treatment in 54 of 300 cases of congenital dislocation of the hip observed at the orthopedic clinic of the University of Hamburg from 1943 to the present. This is equivalent to 18% of the total and corresponds to the incidence reported in the literature. In the majority of cases Lorenz's method of repositioning was employed. Only in a few recent cases, in which the head of the femur stood quite high, extension treatment preceded the repositioning; the aim being to reduce the trauma of repositioning. The number of cases treated in this manner is too small to justify separate evaluation. Roentgenologic examination was done during change of the plaster casts, that is, at least every three months. In the majority of cases in which osteochondritic lesions developed, the first roentgenologic signs in the form of increased density and lacunar resorption were noticeable from six to seven months after reposition. The average age of these children was 1 year and 9 months; the youngest child was 7 months old, the oldest three years and 9 months old. Favorable clinical results were obtained in three times as many cases as was indicated by the roentgenologic observations. The appearance of osteochondritic changes on the head of the femur following reposition in congenital dislocation of the hip joint does not greatly interfere with the early results of such treatment. The late prognosis, particularly as regards the development of arthrosis deformans, has not been definitely established.

Beiträge zur Klinik der Tuberkulose, Heidelberg

108:189-352 (No. 3/4) 1953. **Partial Index**

*Bronchiectasis and Tuberculosis. E. Müller and K. Poppendieck.—p. 189.
Effect of BCG Vaccination in Animal Experiments. H. Spiess.—p. 209.
Study of Effect of Modern Tuberculosis-Therapeutics on Mycobacterium Tuberculosis with Special Consideration of Natural (Unspecific) Phagocytosis. W. Schmidt.—p. 227.
Disappearance of Tuberculin-Allergy. J. Silveira.—p. 282.
*Clinical Value of Combined Treatment of Pulmonary Tuberculosis with Streptomycin and Para-Aminosalicylic Acid (PAS). F. Trendelenburg. —p. 293.

Bronchiectasis and Tuberculosis.—The relationship between bronchiectasis and tuberculosis has not yet been completely elucidated. It has, however, been established that dilatation of the bronchi may occur in all the stages of tuberculosis and also in true bronchial tuberculosis. In addition bronchiectasis appears to be associated with advanced pulmonary tuberculosis more frequently than is generally assumed. Bronchiectasis was found at necropsy in 50 of 200 patients who had died of advanced tuberculosis, an incidence of 25%. This selective occurrence of bronchiectasis in tuberculosis is due to the type of the tuberculosis and the constitution of the individual patient rather than to the local conditions. The tendency to atelectasis particularly associated with productive-fibrotic and productive foci is responsible for the occurrence of bronchiectasis in patients with lymphatic diathesis. As a rule bronchiectasis does not exert an unfavorable effect on the pulmonary disease, and particularly the propagation of Myco. tuberculosis is not increased. The necropsy records of 981 unselected patients with tuberculosis, from which the previously mentioned 200 records of patients with advanced tuberculosis were taken, suggested that the occurrence of bronchiectasis of nonspecific pathogenesis among these patients is rare. Of 1,000 living patients with pulmonary tuberculosis, only 3 had true bronchiectasis that preceded the occurrence of tuberculosis for many years. Tuberculosis in these patients usually developed in an area of the lung that had not been involved by bronchiectasis. The two diseases appear to be independent and the tuberculosis as a rule even has a tendency to recovery. This may be due to inhibition of the growth of the tubercle bacilli by an increased number of lymph nodules in the bronchiectatic lung.

Streptomycin and Para-Aminosalicylic Acid in Pulmonary Tuberculosis.—According to Trendelenburg, reliable evaluation of the therapeutic effects of any drug in pulmonary tuberculosis is possible only on a methodical basis that has been adapted to the specific conditions of tuberculosis. Only with sufficient observation of the patient before administration of the drug and with therapeutic observation on each patient can the influences be excluded that so frequently distort conclusions on the treatment of pulmonary tuberculosis. Furthermore, definite statements concerning the therapeutic effect can be made only on a moderate number of cases, since even large statistical numbers cannot counterbalance the highly varied course of tuberculosis. Individual analysis of critically selected cases rather than statistics on large numbers of patients is imperative. Of 250 patients with pulmonary tuberculosis who had been given combined treatment with streptomycin and *p*-aminosalicylic acid, 52 satisfied the requirements for unobjectionable critical analysis and were individually evaluated. Of these 52 patients between the ages of 18 and 52, 49 (approximately 90%) obtained improvement as a result of the combined treatment with a uniform dose of 0.5 to 1 gm. of streptomycin plus 10 to 14 gm. of *p*-aminosalicylic acid daily for a uniform period of three months. The total doses administered were 60 gm. of streptomycin and 800 to 1,200 gm. of *p*-aminosalicylic acid. Of 39 cavities, 15 (40%) disappeared, and pronounced diminution in size was observed in additional 20 (50%); the remaining 4 were unchanged. The increased erythrocyte sedimentation rate was restored to normal in three-fourths of the cases, and was reduced in the remainder. Bacilli observed in the sputum of 33 patients before the institution of the treatment disappeared in 21; the number of the bacilli was reduced in 11 patients and was unchanged in 1 patient. Evaluation of drug resistance is necessary, but resistance is rare with the combined treatment. Indications for the use of this treatment have a wide range but should be guided by the entire plan of treatment. Proved methods of collapse, particularly pneumothorax and pneumonolysis, remain indispensable. Preoperative stabilization with drugs may be preferred to prophylactic chemotherapy as an adjunct to surgical treatment. The equal improvement obtained by treatment with streptomycin and *p*-aminosalicylic acid in various forms of pulmonary tuberculosis, makes it possible to predict the effect of tuberculostatic therapy and to devise the plan of treatment accordingly. Treatment with streptomycin and *p*-aminosalicylic acid has its definite advantages over that with other drugs including isoniazid.

British Journal of Industrial Medicine, London

10:1-68 (Jan.) 1953

Influence of Hormones on Development of Silicotic Nodules Produced by Intraperitoneal Injection of Quartz. E. Schiller.—p. 1.
Action of Different Forms of Pure Silica on Lungs of Rats. E. J. King, G. P. Mohanty, C. V. Harrison and G. Nagelschmidt.—p. 9.
Some Psychological Conflicts Caused by Group Bonus Method of Payment. N. M. Davis.—p. 18.
Emotional Stability in Colliery Workers. A. Heron and D. Braithwaite. —p. 27.
*Investigation into Removal of Radioactive Contamination from the Hands. J. Gregory.—p. 32.
Field Study of Occupational Deafness. C. M. Johnston.—p. 41.
Age and Industrial Accident Rates. H. F. King and D. Speakman.—p. 51.

Removal of Radioactive Contamination from Hands.—An investigation was designed to determine the comparative value of certain washing agents in removing radioactive contamination from workers' hands, and was carried out at a factory processing radioactive materials. Those working in contact with radioactive materials are provided with a complete change of clothing to be worn in the factory. On completing the day's

work, employees remove the special factory clothing and pass through a shower-bath. Their hands are checked on machines to determine their degree of radioactive contamination. This has come to be known as "hand-monitoring," which is carried out on an "alpha" hand-counting instrument. If any contamination above a certain maximum permissible level is discovered, the hands are washed again until the contamination has been removed. Maximum permissible levels of hand contamination for alpha activity is 600 counts per minute per hand. For 10 months preceding October, 1950, a large number of hand-monitoring checks were carried out on employees at this factory, and 1.48% of the process workers showed some detectable radioactive contamination. The contamination was greater than 600 counts per minute per hand in only 0.22%. In devising suitable experiments for comparing the efficiency of different washing agents, a contaminant comparable to the compounds likely to be met with in the factory and of known radioactivity was necessary. This contaminant could then be applied to the hands of volunteers and be removed by successive washes, the radioactivity remaining being measured after each wash by means of the alpha hand-monitoring machine. Ten cleansing agents were compared, and of these white "Windsor" soap and a mixture of equal parts of soap-powder and wood flour were found to be the two most effective for cleansing the hands of substances containing uranium and radium.

British Journal of Ophthalmology, London

37:65-128 (Feb.) 1953. Partial Index

Retinal Photography in Colour. P. Hansell and E. J. G. Beeson.—p. 65.
Stellate Ganglion Block in Glaucoma. S. J. H. Miller.—p. 70.
Polarized Light Studies of Corneal Structure. E. J. Naylor.—p. 77.
Present Status of Corticotropin (ACTH), Cortisone, and Hydrocortisone in Ophthalmology. D. M. Gordon, J. M. McLean and H. Koteen. —p. 85.
Ocular Complications of Mumps. D. P. North.—p. 99.
Tissue Therapy in Parenchymatous Xerosis. L. P. Agarwal.—p. 102.
Topical Use of Terramycin Ointment in Trachoma. R. Naccache.—p. 106.

British Journal of Plastic Surgery, Edinburgh

5:221-300 (Jan.) 1953. Partial Index

Blood Groups and the Homograft Problem. M. F. A. Woodruff and T. M. Allan.—p. 238.
Reanimation in Facial Paralysis. J. Collier.—p. 243.
Technique for Reanimation of Face After Paralysis of Seventh Nerve. R. J. V. Battle.—p. 247.
Reanimation in Facial Palsy. D. N. Matthews.—p. 253.
Reanimation of Face in Paralysis of Facial Nerve. P. Clarkson.—p. 259.
Early Treatment of Burns at Regional Plastic Centre: with Review of 100 Cases Treated by Exposure. A. J. Evans.—p. 263.
*Exposure Treatment of Burns in Children. D. G. Taylor.—p. 275.

Exposure Treatment of Burns in Children.—The cases of two children with burns treated by exposure to air are reported. The first patient, a 4-year-old boy, was admitted to the hospital 36 hours after burning. His general condition was fair. He took fluids orally, and initial medication was given by this route to avoid cutting down on a vein. The burns were exposed except for those on the right leg; dressings were retained here at first, owing to the impossibility of preventing pressure on the burnt surfaces. The position of the child was designed to keep all contiguous burnt areas from contact with each other. Coagulation was assisted by dusting penicillin powder on to the wounds. By the 15th day after burning a large proportion of the crusts had separated, revealing an epithelial cover. There was, however, sepsis beneath the coagulum around the right shoulder, and since culture revealed a penicillin-resistant Staphylococcus, intramuscular injections of streptomycin were begun. Day by day removal of heaped-up infected crusts proved difficult, owing to the child's apprehension. The remainder of the coagulum was removed on the 22nd day under general anesthesia. Saline packs were applied and chloramphenicol was substituted for streptomycin to save the child the pain of injections. Three days after removal of the coagulum, postage-stamp grafts were applied to all clean areas, and a windowed plaster-of-paris shoulder spica bandage was applied. The deeply burnt shoulder was held in abduction in a plaster cast, and three months later a thick split-skin graft was applied to the axilla to overcome contraction. Full abduction of the shoulder joint was maintained postoperatively with a plaster cast. The child is now well. The second patient was a 9-year-old girl whose burns extended over 50 to 60% of the body surface. Covering the burns for several days did not prevent satisfactory coagulation on exposure. Clinical improvement and reduction of pain followed exposure. Epithelial survival was greater in both cases than at first seemed likely. The difficulties of posture in widely scattered deep burns can be overcome by using a Balkan beam and restraining slings. Good nursing is required to overcome the child's fears, and to see that the desired position is maintained without discomfort. The services of the biochemist are indispensable in a patient in whom initial shock therapy has failed or is incomplete.

British Medical Journal, London

1:287-348 (Feb. 7) 1953

*Present Status of Lung Resection for Pulmonary Tuberculosis. F. H. Young.—p. 287.
Skin Lesions in Organic Brain Disease. E. E. Robertson.—p. 291.
Effect of Isoniazid on Carbohydrate Metabolism in Controls and Diabetics. G. R. W. N. Luntz and S. G. Smith.—p. 296.
*Surgical Treatment of Intractable Phantom-Limb Pain. M. A. Falconer. —p. 299.
Detection of Tuberculosis in General Practice by Photofluorography. F. A. Nash, B. Benjamin and T. J. Lee.—p. 304.
Treatment of Bowel Infections of Tropics. A. R. D. Adams.—p. 308.
Chemotherapy of Malaria and Trypanosomiasis. L. G. Goodwin.—p. 311.
Successful Lactation in Addison's Disease. V. U. Lutwyche.—p. 313.
Neonatal Myasthenia Gravis: Report of Case. B. Gans and D. H. Forsdick.—p. 314.

Lung Resection for Pulmonary Tuberculosis.—The results of lung resection in 78 patients with pulmonary tuberculosis show that the disease has been rendered quiescent in many patients who would otherwise have died or lapsed into hopeless invalidism. The mortality rate depends largely on the condition of the patient; when the disease is advanced, the mortality will be appreciable. Most of the patients in this series had a fair degree of resistance. Satisfactory results were secured in 53 patients, as shown by the fact that the disease was apparently arrested and tubercle bacilli were absent from the sputum. There were 10 deaths, and the results were unsatisfactory in 15 cases. The feeling of safety and satisfaction often produced by lung resection may have disadvantages; in most cases, tuberculous disease exists in other parts of the lungs, necessitating prolonged aftercare, with restriction of physical and general activity to which the patient finds it hard to submit. Bronchial stenosis is the basic indication for resection in advanced cases. Stenosis occurring in the upper lobes, however, is an exception to this rule, because resection has not yet been proved superior to surgical collapse therapy in upper-lobe disease. The likelihood of deterioration in the opposite lung following resection is high if the disease has shown signs of instability within the previous year, or if the patient is over 50. Careful estimation of the residual pulmonary function which will remain after pneumonectomy is of primary importance; if the patient has severe dyspnea on exertion, the result must be considered poor. Resection should usually be postponed until the maximum benefit has been secured from conservative measures, because the patient's fate ultimately depends on his resistance.

Surgical Treatment of Phantom-Limb Pain.—Anterolateral chordotomy may offer prolonged, if not permanent, relief in many cases of intractable phantom-limb pain. Follow-up of 12 patients, six with upper-limb phantoms and six with lower-limb phantoms, for from two to seven years shows that nine have been greatly benefited as regards pain by this procedure, one is slightly improved, and two had recurrences. Various other measures, such as resection of stump neuromas, sympathectomy, and reamputation, had previously failed to give them relief. Phantom-limb pain of the type and severity experienced by these patients occurs in possibly less than 1% of cases, and has been regarded by some as largely a psychological disturbance. Most of these patients had been seen by psychiatrists, who had failed to find significant psychogenic features and who had been unable to relieve the pain by psychotherapeutic measures. Some of the patients were greatly demoralized by pain, but so are many persons with other painful conditions, and the fact that all the patients gave sim-

ilar descriptions of their pain indicates that it was organically determined. A high cervical chordotomy was performed on the patients with upper-limb phantoms under local analgesia, so that the sensory loss resulting from any incision in the cord could be checked immediately. The incision was made in stages until the pain in the phantom was relieved. Tests during convalescence showed that each patient had a complete loss of pain and temperature sensibility below the fourth and fifth cervical segmental levels. Touch was spared and there was usually a contralateral Horner's syndrome. The phantom, though still present, was painless. Each of the four patients whose pains were permanently relieved has developed other symptoms which detract from the benefits of the operation, although on balance each is better than he was before. A chordotomy at the second and third thoracic vertebral levels was performed under general anesthesia on the patients with lower-limb phantoms, resulting in loss of pain and temperature sensibility below the fifth and seventh thoracic segmental levels on the side of the stump. Pain in the phantom was relieved, though the phantom itself remained, as in the case of the upper limbs. This observation suggests that the structures responsible for the pain in cases of this type are the secondary sensory neurones which have their cell bodies in the substantia gelatinosa of Rolando. It may be that the cells of the substantia gelatinosa, cut off from their normal-patterned stream of stimuli as a result of limb loss, discharge spontaneously or react to unusual sources of stimuli, thus provoking pain. Occasional rare failure of the operation probably indicates that neurones at still higher levels in the pain pathways of the central nervous system are perpetuating the pain.

1:349-414 (Feb. 14) 1953

*Results of Blalock-Taussig Operation in 200 Cases of Morbus Caeruleus. M. Campbell and D. Deuchar.—p. 349.
Radioactive Phosphorus (P^{32}) in Treatment of Menorrhagia. H. C. McLaren, J. C. Heath and A. Quinton.—p. 358.
Variation in Technique of Intracutaneous B.C.G. Vaccination. C. E. Palmer and P. Q. Edwards.—p. 363.
Measurement of Leakage of Tuberculin Syringes. J. Guld and C. Rud. —p. 368.
New Diphtheria Prophylactic (N.A.F.T.). D. C. Lahiri.—p. 370.
Pancreatic Side-Effects of Morphine. H. Wapshaw.—p. 373.
Gastro-Enteritis in General Practice: Study of 90 Unselected Cases. W. J. Smither.—p. 376.

Blalock-Taussig Operation in Patients with Morbus Caeruleus.—An anastomosis of the Blalock-Taussig type was performed or attempted in 200 patients with morbus caeruleus, 166 of whom had Fallot's tetralogy, 7 tricuspid atresia, 21 pulmonary atresia, 3 dextrocardia and 3 levocardia but with the abdominal viscera transposed. Nearly all of these patients were followed for more than one year, and several for four years. The operation was usually an end-to-side subclavian-pulmonary anastomosis. At first this was performed on the right side, but later the left side was preferred. In about one-twelfth of the patients, mainly in those with pulmonary atresia, it was found necessary to divide a pulmonary artery and perform an end-to-end anastomosis. Pott's modification of the Blalock-Taussig operation was carried out in three patients only. Of the 200 patients, 99 obtained very good results, being able to walk a mile or more and lead almost normal lives without too much physical activity; 37 obtained good results; 17 were somewhat improved; 6 had good results or were improved first but died 8 to 37 months after the operation; 6 were therapeutic failures; in 11 anastomosis was not possible; and 24 died at or shortly after the operation. Of the patients with Fallot's tetralogy, 75% were benefited greatly and only 8% died. In the smaller number of patients with more complex lesions, such as tricuspid atresia, dextrocardia and pulmonary atresia, the results were much less satisfactory. The total mortality was nearly 30% and only 35% obtained good results. More experience is needed to decide which of these patients can hope to benefit from operation, but some tentative suggestions are made. Most patients had an increased vital capacity and obtained pronounced relief of their cyanosis, clubbing, and polycythemia. Some cyanosis, at least on exercise, and some clubbing generally remained unless they were slight preoperatively. The hemoglobin usually dropped from between 120 and 160% to between 90 and 120%. In nearly all the successful cases a continuous murmur could be heard at the site of the anastomosis, and the presence of this soon after the operation was often one of the best indications of success. The pulse pressure may be a little greater as the result of the anastomosis. Generally the improvement gained in the first few months after operation was a good guide to the future and was maintained. The annual mortality rate was not much above 1% and this included the risks to which these patients were inevitably exposed whether they had had an operation or not. Special attention was paid to the enlargement of the heart because this has been thought to be the great drawback to the operation. Generally the increase was not great, and it was not progressive after the first few months. The cardiothoracic ratio occasionally increased quickly from 48 to 52% and then remained constant during the period of observation. In a few patients in whom the increase was great or even progressive, it was feared that congestive heart failure might develop, but this occurred in only three with complex lesions within the first six to nine months.

Deutsche medizinische Wochenschrift, Stuttgart

78:213-252 (Feb. 13) 1953. Partial Index

*Herpangina and Herpetic Stomatitis; Epidemiological Observations in Stuttgart. H. Schlack.—p. 213.
*Question of Blood Groups Incompatibility as Cause of Icterus Neonatorum. H. Hoffbauer and H. J. Pettenkofer.—p. 214.
Pneumonia and Circulation; Effect of Physical Exertion on Circulatory Dynamics in Acute Pneumonia. G. Buhr.—p. 216.
Clinical Experiences with Locally Applied Antihistaminic Substances. J. Meyer-Rohn.—p. 221.

Herpangina and Herpetic Stomatitis.—In 1950 a moderately severe epidemic of poliomyelitis occurred in the city of Stuttgart and its suburbs. In 1951 an extensive epidemic of Bornholm disease (epidemic pleurodynia) occurred in the same region. A moderate number of cases of herpangina were observed simultaneously. Herpangina has a sudden onset with temperature rising to 102.2 F (39 C) and up to 104 F (40 C) within one to two hours. Infants, children and adolescents are particularly affected. Small vesicles on the palatine arches which resemble frog-spawn are to be considered the typically localized eruption of the disease; their etiology differs undoubtedly from that of herpes labialis, which was not observed in the patients with herpangina. The regional lymph nodes at the angle of the jaw were enlarged and tender on palpation. Inguinal lymph nodes were somewhat enlarged occasionally. In some of the patients herpangina was associated with a diphasic curve of fever and generalized gingivitis and stomatitis. In the summer of 1952 there occurred only sporadic cases of Bornholm disease, but the incidence of herpangina was much greater than in 1951, and in more than 50% of the patients herpangina was accompanied by more or less severe symptoms of meningeal or encephalitic irritation, such as headache, rigidity of the neck, convulsions, and a clouded state of consciousness. In a considerable number of patients herpangina was again associated with generalized stomatitis and gingivitis the course of which differed from that of the common aphthous stomatitis in that it was less painful, there was less fetid odor, and gingivitis developed only after the occurrence of vesicles at the palatine arches, most frequently during the second phase of the fever. The term herpetic stomatitis and gingivitis was suggested for this condition. These observations support the concept of American workers, that Bornholm disease and herpangina are produced by different substrains of a closely related virus (Coxsackie virus). It seems possible that the peculiar gingivitis or stomatitis observed by the author was produced by another variant of the Coxsackie virus.

Blood Group Incompatibility and Icterus Neonatorum.—Of 483 newborn infants whose mothers were delivered at the women's clinic of the City Hospital in Friedrichshain, Germany, 153 (31.68%) had icterus neonatorum. In 21 infants the icterus was observed on the first or second day of life (icterus praecox). Of the 366 infants whose ABO blood groups were compatible with those of their mothers, 116 (31.69%) had icterus neonatorum, while of the 177 infants whose ABO groups were incompatible with their mothers, 36 (30.77%) had

icterus neonatorum. Of the 425 infants who showed Rh-compatibility with their mothers, 133 (31.29%) had icterus neonatorum; of the 58 who showed Rh-incompatibility with their mothers (mothers rh, and infants Rh), 20 (34.48%) had icterus neonatorum. The difference of 3.48% is statistically insignificant, as is the observed difference of 3.97% in the incidence of icterus neonatorum among the infants of primiparous and multiparous mothers. Of the 483 infants, 255 were boys and 96 (37.65%) of them had icterus neonatorum; of the 228 girls, 58 (25.44%) had icterus neonatorum. The observed difference of 12.21% is not statistically significant. The findings reported by other workers that the incidence of so-called icterus praecox may be higher among infants showing blood group incompatibility with their mothers were not supported by the author's observations. Several cases, however, of severe and early icterus neonatorum in infants in whom ABO incompatibility with their mothers was observed reminded the author of milder cases of icterus gravis neonatorum; this experience suggests that there may be cases of transition from physiological icterus neonatorum to icterus gravis neonatorum which manifest themselves as cases of icterus praecox in the sense of Halbrecht. On the other hand, severe and early icterus was also observed in infants in whom the blood group compatibility with their mothers could not be doubted. The etiology of the physiological icterus neonatorum has not yet been fully elucidated and the diagnosis of erythroblastosis fetalis is difficult; consequently it will not be too easy to provide an explanation for those transition forms.

Glasgow Medical Journal

34:1-34 (Jan.) 1953

*Kaposi's Varicelliform Eruption: Study of Nine Cases, and a Discussion of Etiology. N. R. Grist.—p. 1.
Direct Coombs Test in Disseminated Lupus Erythematosus. A. G. Baikie.—p. 10.
Khellin in Treatment of Angina Pectoris. R. Hill and A. G. Melrose.—p. 17.
Depression of Bone Marrow Activity After Use of Chloramphenicol, with Recovery: Report of Case. J. W. Ferguson and J. P. R. MacFarlane.—p. 22.

Kaposi's Varicelliform Eruption.—Virus studies were performed on nine patients with Kaposi's varicelliform eruption. Five of the cases occurred during the Glasgow mass vaccination of 1950, whereas the other four were sporadic cases. Two of the patients were adults who had had contact with vaccinated children; the other were all children less than 3 years old. Virus isolations were made by the standard method of chorioallantoic egg inoculation and antibodies were estimated on the chorioallantois by the "pock-counting" method, as described in a previous paper. The results indicated that six (including two fatal cases) were due to vaccinia and three (nonfatal) to herpes simplex virus infection. It is argued that classical Kaposi's varicelliform eruption is a generalized, blood-borne infection by herpes or vaccina virus, affecting persons whose skin-reactivity is modified by preceding dermatosis, the disease process being analogous to that of the common viral exanthemas.

Hospital, Rio de Janeiro

43:1-138 (Jan.) 1953. **Partial Index**

Curability of Bronchial Asthma. H. Cardoso de Castro.—p. 27.
Poliomyelitis. J. Guilherme Lacorte.—p. 53.
Sensitization of Guinea-Pig to Neoarsphenamine. A. Oliveira Lima, C. Silva and G. L. Rocha.—p. 79.
*Aureomycin in Treatment of Venereal Lymphogranulomatosis. E. Barbosa Ribas.—p. 105.

Aureomycin in Lymphogranuloma Venereum.—Aureomycin was given to 15 men and 2 women with either acute or subacute venereal lymphogranuloma in all of whom the diagnosis was confirmed by the results of the Frei test. The majority of the patients were between the ages of 20 and 30. The disease was in the early period in three patients. In the remaining patients it had lasted from two weeks to six months. The disease was associated with acute gonorrhea in two patients, syphiloma in one and chancre in one. Therapy consisted of administration of crystalline aureomycin hydrochloride, which was given by mouth in doses of 500 mg. at intervals of six hours for 10 consecutive days, up to a total dose of 20 gm. The treatment was completed by 11 patients. It was interrupted for 48 hours and then resumed up to completion by two patients, discontinued after four days because of intolerance to the drug by one patient and discontinued after administration of 14 gm. in seven days by three patients, because of shortage of the drug. Cure was obtained in 14 cases. One patient did not report for examination of results, and one patient showed no change. The case of intolerance was not observed for results. The treatment has two great advantages over previous treatments: 1. Cure is obtained in the great majority of the patients. The time required for cure is shorter than that of other treatments previously resorted to. 2. Venereal diseases if coexisting with venereal lymphogranuloma are likewise controlled by the treatment. The author recommends the treatment schedule he used.

Journal of Bone and Joint Surgery, London

34-B:541-744 (Nov.) 1952

"Aviator's Astragalus." W. D. Coltart.—p. 545.
Infections of the Hand: Review Based on 1,000 Consecutive Cases. R. H. C. Robins.—p. 567.
Results of Treatment of Infections of the Hand. J. C. Scott and B. V. Jones.—p. 581.
Reticulum-Cell Sarcoma of Bone. J. Valls, D. Muscolo and F. Schajowicz.—p. 588.
Observations on Venous Pressure Estimations in Lower Limb. A. M. Boyd, B. N. Catchpole, R. P. Jepson and S. S. Rose.—p. 599.
*Acute Haematogenous Osteitis in Childhood: Review of 212 Cases. M. White and W. M. Dennison.—p. 608.
Posterior Dislocation of Shoulder: Report of Six Cases. R. G. Taylor and P. R. Wright.—p. 624.
Man with Three Legs. I. S. Smillie and J. H. Murdoch.—p. 630.
Open Dislocation of Elbow with Rupture of Brachial Artery. R. S. Henderson and I. M. Robertson.—p. 636.
Ring-Shaped Medial Semilunar Cartilage. J. V. Basmajian.—p. 638.
Ewing's Tumour Affecting Medial Cuneiform Bone: Report of Case. R. Roaf.—p. 640.
Fibrosarcoma Occurring in Chronic Bone Sinus. W. Waugh.—p. 642.

Acute Hematogenous Osteitis in Childhood.—White and Dennison prefer the term osteitis to osteomyelitis, because the bone marrow plays only a small part in bone suppuration. They apply the term "acute" osteitis to a sudden illness with toxemia, the duration of illness being days rather than weeks. Cases of streptococcic osteitis of infancy are not included in this review. A total of 212 cases of hematogenous osteitis treated between 1936 and 1950 were reviewed. In the 75 patients treated before 1940, the treatment was mainly surgical. A long incision was made over the affected metaphysis, and if pus was evacuated, the wound was packed with petrolatum ("vaseline") gauze and immobilized in a bivalved plaster case. If no pus formation was found under the periosteum, holes were drilled. When pus was not obtained, culture of the edematous marrow or blood oozing from the drill-holes revealed the infecting organism. Within 48 hours pus was usually draining freely. More radical surgery was sometimes undertaken, but it is doubtful whether this gave more satisfactory drainage. Only 16 of the 48 survivors were traced. Of these, two still had discharging sinuses with ankylosis of the hip joint. In the others, the wounds were healed, but all the scars were depressed and many were adherent. The 55 patients of group 2 were treated with sulfathiazole during the years from 1941 to 1945. In this group surgical interventions were similar to those in group 1. The dosage of sulfathiazole was based on the minimal effective blood concentration of 2.5 mg. per 100 cc. and was approximately 1 gm. per 20 lbs. of body weight a day. Sulfathiazole was given for a week; if necessary a second course was given three weeks later. Only 19 of the 48 survivors were traced. Nine were well; of the remaining 10 patients, 5 had been readmitted for removal of sequestra. Four of the 10 had marked overgrowth and 3 moderate overgrowth of the affected limb, and lengthening was measurable in the remaining three patients. Adherent scars were present in 4 of the 10 cases. Two joints (hip and ankle) were ankylosed and one hip joint was subluxated. One patient had a flexion deformity of the knee following damage to the posterior aspect of the lower femoral epiphysis. During the five years from 1946 to 1950, inclusive, 82 patients were treated with penicillin, the dosage being 5,000 units per pound

of body weight per 24 hours. Once an abscess has formed, it cannot be sterilized by the systemic administration of penicillin, and in such cases surgery is still necessary. Aspiration is seldom successful in evacuating pus. Bone drilling should rarely be necessary, but such drilling followed by primary suture of the skin, will do less harm than incomplete relief of tension. Guttering and "saucerization" have no place in the modern treatment of acute osteitis. Three of the 81 survivors in the 82 treated with penicillin could not be traced. Sixty of the remaining 78 patients have no disability. Fifteen have measurable increase (from 1 cm. to 2.5 cm.) in length of the affected limb, and in two of these there is a postural genu valgum. Of the 11 patients with pyogenic arthritis, one had ankylosis of the ankle and another (neonatal osteitis) has 1½ in. (8 cm.) shortening of the leg four years after damage to the lower end of the femur. In the remaining nine patients joint movements are painless, and there are no adherent scars and no sinuses. The mortality rate before the chemotherapeutic era was 36%, with sulfathiazole treatment 12.7%, and with penicillin 1.2%.

Journal of Clinical Pathology, London

6:1-98 (Feb.) 1953. **Partial Index**

Simple Method of Studying Generation of Thrombin in Recalcified Plasma: Application in Investigation of Haemophilia. W. R. Pitney and J. V. Dacie.—p. 9.
Measurement of Prothrombin in Plasma: Case of Prothrombin Deficiency. R. Biggs and A. S. Douglas.—p. 15.
Pseudo-haemophilia: Acquired Haemorrhagic Diathesis Due to Circulating Anticoagulant. C. Hougie.—p. 30.
Transfusions of Suspensions of Blood Platelets in Thrombocytopenia and Thrombopathia. S. van Creveld, M. M. P. Paulssen and H. L. J. M. Bartels.—p. 41.
Laboratory Tests for Incipient Thrombosis. G. I. C. Ingram and R. Biggs. —p. 46.
Vitamin B_{12} Concentrations of Serum and Urine in First 72 Hours After Intramuscular Injections of Vitamin. D. L. Mollin and G. I. M. Ross. —p. 54.
Investigation into Determination of Corticosteroids in Urine: I. Determination of Corticosterone-Like Substances. S. L. Tompsett.—p. 74.
Study of Barbiturate Intoxication by Ultra-Violet Spectrophotometric Technique. J. T. Wright and R. G. S. Johns.—p. 78.
Lung Biopsy in Mitral Stenosis. J. B. Enticknap.—p. 84.

Journal d' Urologie, Paris

58:697-806 (No. 11) 1952

*Anatomicoclinical Forms of Malignant Hypertension. G. Mayer.—p. 697.

Symptomatic and Anatomic Characteristics of Malignant Hypertension.—As a result of his observations on five patients with malignant hypertension the author states that this disease, which is characterized by endarteritis, necrosis, and occasionally periarteritis of the terminal segment of the renal arterial system (afferent and distal interlobular vessels), usually affects the glomerular apparatus only mildly and rather late. In the common cachectic form of malignant hypertension, the renal symptoms play only a secondary role. Occasionally, however, there may be acute or chronic cases in which the inflammatory process that destroys the arteries involves a large number of glomeruli. Then, more or less early, the renal element assumes the main role and the course of the disease tends to uremia. In one of the author's patients, a 32-year-old man, the renal hypertension was associated with cachexia, uremia, diabetes mellitus, and a gastrointestinal syndrome consisting of pain, hemorrhage from the gastrointestinal tract, and partial obstruction. This clinical picture was attributed to diffuse lesions of the glomeruli, involvement of multiple organs, and a mutilating arteritis in the splanchnic area. There are still certain other cases that unquestionably should be classified as malignant hypertension but that are characterized by only moderate emaciation, incompletely malignant course, hypertension that may or may not be renal, and cardiac failure, which finally predominates and causes death. This noncachectic or cardiac form of the disease comprises abortive cases possibly due to a secondary reaction (the vascular poles of the glomeruli and the media of the interlobular vessels present cells with a clear cytoplasm), and cases with a prolonged course that may be related to predominant involvement of the proximal and medial interlobular vessels by the vascular disease.

Lancet, London

1:253-304 (Feb. 7) 1953

*Surgical Policy for Peptic Ulcer. H. D. Johnson and I. M. Orr.—p. 253.
Serum Antibody Response in Alastrim. K. McCarthy and A. W. Downie. —p. 257.
Method of Administering Dicoumarol. C. J. Bjerkelund.—260.
Hydatid Disease: Serological Reactions with Standardised Reagents. H. J. Bensted and J. D. Atkinson.—p. 265.
Toxipathic Hepatitis Due to Fowler's Solution: Case Treated with Dimercaprol. H. J. Wade and E. S. Frazer.—p. 269.
Postpartum Anal Fissure. J. D. Martin.—p. 271.
Gastric Mucoprotein and Intrinsic Factor: Response of Pernicious Anaemia to Oral Vitamin B_{12} Plus Normal Gastric Juice Treated with Receptor-Destroying Enzyme. B. P. Marmion, E. G. Saint, H. J. Gardner and J. L. Stubbe.—p. 273.

1:305-352 (Feb. 14) 1953

Body-Fluid Depletion. D. A. K. Black.—p. 305.
D.D.D. Therapy in Cushing's Syndrome. H. L. Sheehan, V. K. Summers and J. Nichols.—p. 312.
Isoniazid-Resistant Strains of Tubercle Bacilli: Their Development and Stability. M. Barnett, S. R. M. Bushby and D. A. Mitchison.—p. 314.
Outbreak of Streptococcal Infection in a Maternity Hospital. J. Gibson and R. M. Calman.—p. 320.
Hexamethonium Compounds in Treatment of Pre-Eclampsia and Essential Hypertension During Pregnancy. N. Morris.—p. 322.
Cultivation of Toxoplasma Gondii in Tissue Culture in Mammalian Cells. J. A. Lock.—p. 324.

Surgical Policy for Peptic Ulcer.—Of 108 patients with duodenal ulcer treated by vagotomy alone and followed up for four to seven years after the operation, 65 (60%) received lasting benefit and continue to have good results; however, 27 (25%) have had to submit to further surgery, either to relieve stenosis and obstruction or to remove a recurrent ulcer, and the remaining 16 (15%) were only partially relieved of symptoms and had to have intermittent medical care. Thus vagotomy alone cannot be recommended for treatment of peptic ulcer because, unless the effects of scarring and deformity are overcome at the same time, sustained symptomatic relief cannot be depended on. Vagotomy, however, has proved and maintained its efficiency in controlling excessive acid secretion and therefore continues to play an important ancillary part in surgical treatment of peptic ulcer. As a result of their experiences, the authors during the years ending December, 1951, followed a policy for peptic ulcer in which patients were selected according to the results of special investigations of acid secretion, either for two-thirds gastric resection alone (patients with normal or low secretion rates), or for a similar moderate gastrectomy with the addition of vagotomy (patients with hypersecretion). Gastroenterostomy plus vagotomy was used for a few bad-risk patients. Of the 526 patients operated on under this policy, 486 had moderate gastrectomies (236 of them with vagotomy added), 26 had vagotomy plus gastroenterostomy, 2 had short-circuits for stenosis after earlier vagotomy, and 12 had vagotomy alone for anastomotic ulcers after earlier gastroenterostomy. There were six postoperative deaths, a mortality rate of 1.1% of the entire group. The patients themselves assessed their results by answering a questionnaire; thus the bias of the observer was eliminated. The results of the authors' policy ascertained in this way in 513 of the 526 patients were compared with those in 222 of 241 patients who had radical gastrectomy of four-fifths to seven-eighths of the stomach and who had been similarly assessed during the same period. Though both methods of treatment achieved a high order of success, the "policy group" showed a lower incidence of every side-effects and a higher proportion of satisfactory results during the period reviewed.

Minerva Chirurgica, Turin

7:925-968 (Dec. 31) 1952. **Partial Index**

"Three-Branched" Clamp in Cardiovascular Surgery. A. M. Dogliotti and G. Guglielmini.—p. 925.
Results of Partial Thoracoplasty with Removal of First Three Ribs. E. Nicodemi.—p. 931.
Treatment of Varices of Legs with Multiple Percutaneous Ligation and Sclerosing Injections With or Without Stripping of High Portion of Great Saphenous Vein. M. Battezzatti and B. Binda.—p. 936.
*Cytochrome C in Resuscitation. M. Battezzatti, C. Taddei and L. Ramoino.—p. 939.

Cytochrome C in Resuscitation.—The authors review the literature on the various methods used for resuscitation and report on the results of their experiments in this field. Cytochrome C was a valuable factor in the resuscitation of eight dogs in

whom they had produced anemic anoxia. They withdrew blood from the femoral artery of the eight animals under general thiopenthal (pentothal®) sodium anesthesia after they had injected into them 5 mg. of heparin per kilogram of body weight. When 80% of the circulating blood had been withdrawn, the arterial pressure had dropped to zero, the electrocardiograms gave horizontal tracings, the irregularity of rhythm and cardiac rate was pronounced, the cardiac activity was severely impaired, and apnea began. Then from 80 to 140 mg. of cytochrome C in from 20 to 35 cc. of isotonic sodium chloride solution were introduced into the dogs through a catheter placed near the right auricle. About four minutes later a quantity of isotonic sodium chloride solution was injected equal to that of the withdrawn blood. The electrocardiograms began to reveal return of cardiac activity and after five minutes the tracings were again normal. Thus, after from five to six minutes of complete apnea the circulation and respiration were restored and on awakening the dogs could walk and take food. Some dogs, however, in which the withdrawal of 80% of the blood was followed by an epinephrine injection and then withdrawal of 200 additional cc. of blood, recovered for 10 to 15 minutes and then died. The authors in explaining the mechanism of action of the cytochrome which increased the contractile activity of the heart suggest that it had a two-fold action, namely, it utilized the residual oxygen that had remained in the tissues and exploited to the utmost the amount of oxygen, however small, that continued to be carried by the residual blood.

Minerva Medica, Turin

44:1-60 (Jan. 6) 1953. **Partial Index**

*Immediate Results of TEM Therapy in Neoplastic Diseases. G. Lenti and F. Gavosto.—p. 1.
Particular Effects of Administration of Sodium Thiosulfate or Cysteine on Clinical Picture and Metabolism of Patients with Diffuse Neoplasms. W. Paolino and F. Gavosto.—p. 20.
Pronounced Plasma Hyperglobulinemia with Diffuse Plasma Cell Hyperplasia in Abdominal Mucinous Adenocarcinoma. W. Paolino and F. Gavosto.—p. 31.

Triethylene Melamine in Neoplastic Diseases.—Thirty patients with leukemia, lymphosarcoma, inoperable lung cancer, gastric cancer and related diseases were treated with triethylene melamine (TEM). The drug was given orally in daily doses of 2.5 to 5 mg. according to the changes of the clinical picture and laboratory data. The total dose was 10 to 235 mg. over a period of from few days to several months. In the immediate follow-up the drug had moderate effects in the six patients with Hodgkin's disease whereas striking and quick effects were obtained in three patients with lymphosarcoma, although severe myelotoxicosis developed in them. Since nitrogen mustards have little effect in patients with this disease and roentgen therapy is limited to localized forms only, the positive effects of this drug have great importance. Three patients with reticulum cell sarcoma were not influenced by the drug; results were moderate in three patients with chronic myeloid leukemia and slight in the only patient with chronic lymphocytic leukemia. One patient with gastric cancer improved and gained 1 kg. whereas the condition of two other patients with gastric cancer remained unchanged. The improvement in 2 of the 10 patients with cancer of the lung was evidenced by the arrest of the evolutive process, which had been rapid before treatment was instituted. In two more patients with cancer of the lung the roentgenograms revealed a reduced shadow and disappearance of the atelectatic areas. The condition of the patient with hepatoma did not change. All the patients tolerated the drug well, and only two had postprandial nausea. The toxic action of the drug on hemopoiesis (leukopenia) was pronounced. If two or more cycles of triethylene melamine therapy fail to bring improvement, its administration should be discontinued, since it would lead to chronic myelotoxicosis. This drug has the advantages that it can be given orally and does not cause the cholinergic and convulsive side-effects that follow nitrogen mustards therapy, and that it is beneficial in instances in which nitrogen mustards are almost useless. On the other hand, nitrogen mustards are more effective in Hodgkin's disease and cause a milder form of myelotoxicosis that can be cured or prevented. Roentgen therapy combined or alternated with nitrogen mustard or triethylene melamine may give better results than any one of the three therapies alone. Triethylene melamine is effective in cases in which roentgen therapy has failed and vice versa. It is agreed, however, that this is the drug of choice in patients with multiple superficial and deep lesions, while roentgen therapy is indicated in well-delimited forms. Sometimes a lesion that had become insensitive to prolonged roentgen therapy responds again to x-ray treatment after application of nitrogen mustards or triethylene melamine. This suggests a difference in the mechanism of action of the two drugs and roentgen therapy, but more studies are needed to prove this hypothesis.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

97:129-192 (Jan. 17) 1953. **Partial Index**

*Salpingolysis and Covering of Tubes and Ovaries with Amniotic Membrane. B. S. ten Berge and The Tik Lok.—p. 133.
Treatment of Bronchial Asthma with Corticotropin. W. J. Quarles van Ufford.—p. 140.
Extrapulmonary Gas Exchange. H. Van Goor.—p. 147.

Salpingolysis Followed by Covering Ovaries with Amniotic Membrane.—Following salpingolysis to overcome obstruction of the uterine tubes the authors advocate covering the tubes and ovaries with preserved amniotic membrane. After studying the effects of this method in animals, they used it in 13 patients, in 7 of whom the efficacy of the method was subsequently studied by hysterosalpingography. The tubes proved patent in six of these seven patients; in the seventh complete opening had not proved possible during the operation. Pregnancies have not occurred so far, but at the time of this report only 18 months had elapsed since the first of these operations was done. The technique of the operation is described and the histories of the patients are presented. The authors obtain the chorioamniotic membrane in the course of cesarean operations, and it is preserved in glycerin at –20 C (–4 F). Studies on the animals in which the method was used showed that the formation of adhesions in the peritoneal cavity may be prevented by this method.

Nordisk Medicin, Stockholm

49:41-80 (Jan. 9) 1953. **Partial Index**

*Diagnosis in Headache. L. Emblem.—p. 41.
Therapy in Headache. B. P. Silfverskiöld.—p. 44.
Fronto-Occipital Pain. F. Söderberg.—p. 47.
Effect of Insulin on Excretion of Epinephrine and Nor-Epinephrine in Well Persons and in Acromegaly and Postural Hypotension. U. S. von Euler and R. Luft.—p. 54.
Hypopotassemia with Paresis After Abuse of Laxatives. J. Mårtensson.—p. 56.

Diagnostic Problems in Headache.—Various types of headache and their clinical differentiation are reviewed. Headache due to long-continued contraction of head and neck muscles is presumably the most usual form. The combination of locally produced and emotionally accentuated muscle tension and myalgia is common; the sum of the two mechanisms brings the muscle into so marked and prolonged contraction that pain results. The presence of a pain-sensitizing factor is suggested. The most frequent type of vascular headache is migraine. There is apparently a relation between allergy and migraine, as allergic manifestations are often seen in migraine families. Atypical migraine occurs often. Patients with intracranial aneurysms often have a history of migraine. Possibly the predisposition to migraine and the predisposition to aneurysm are genetically linked and depend on functional and structural vascular anomaly on hereditary basis. Encephalopathy of various kinds may cause headache, the organic lesion producing neurotic and vegetative instability which in turn gives rise to headache. In most cases of headache more than one mechanism acts. Determination of the individual components in these pain complexes is decisive in diagnosis. A combination of different types of headache often accentuates the pain. In diagnosis in the case of patients with headache exact history is important, with determination of the neurologic status, psychiatric evaluation, and general somatic examination.

Presse Médicale, Paris

61:97-124 (Jan. 28) 1953. Partial Index

Use of Trypsine in Treatment of Hemothorax. E. Delannoy and M. Ribet.—p. 97.
*Pathological, Experimental, and Clinical Bases of Left Splanchnicectomy in Treatment of Chronic Relapsing Pancreatitis. P. Mallet-Guy and J. Feroldi.—p. 99.
Radiological Diagnosis of Abscesses of Major Peritoneal Cavity. C. Olivier, J. Huguier and N. Arvay.—p. 101.
Rectal Tuberculosis. A. Bensaude and R. Boom.—p. 105.

Left Splanchnicectomy in Chronic Relapsing Pancreatitis.—The history of chronic relapsing pancreatitis is one of repeated acute inflammatory attacks. Histological study of the diseased pancreas shows that various nervous lesions characterize the condition. These lesions are apparently responsible, if not for the onset, at least for the persistence of the disturbance and for the constant recurrence of acute episodes in a gland the condition of which is unstable. Experiments have shown that only excitation of the left splanchnic nerve as a whole or of its peripheral end can produce acute pancreatitis; excitation of its central portion, or of the pneumogastric nerves, is ineffective. Left splanchnicectomy, which breaks the reflex arc by cutting the centrifugal fibers, puts an end to the relapsing process in pancreatitis. It may also prove curative, not of the sclerosis, which is irreversible, but of the factors resulting in progression, which gradually disappear after the operation. The late results of the procedure have proved excellent: of 52 patients observed between 1942 and 1951, 47% had perfect results from the beginning, with complete disappearance of symptoms; in 14.3% the results, though perfect, were obtained gradually, as if the gland recovered as a consequence of rest; some functional disturbance persisted but the results were otherwise good in 21.4%; 11.9% were improved; and in only 2.4% was there definite failure. Rapid and in many cases substantial weight gains indicative of effective cure constituted the most noticeable finding in the patients (83.3% in all) who benefited by the operation. The efficacy of left splanchnicectomy supports the authors' belief that neurogenic factors play an important part in the development of chronic relapsing pancreatitis.

Revista Médica de Chile, Santiago

80:655-704 (Nov.) 1952. Partial Index

*Classification of Anemias. R. Armas Cruz.—p. 655.
Cells of Lupus Erythematosus. G. Ducach and J. Granic.—p. 657.
*Streptomycin in Therapy of Pulmonary Tuberculosis: Results in Employees in Santiago. B. Viel V. and V. Farga C.—p. 667.

Classification of Anemias.—Four types of anemia can be distinguished: (1) premedullary, (2) medullary, (3) postmedullary, and (4) anemia of indefinite functional origin. Premedullary anemia is due to deficiency or lack of iron, a vitamin factor, or a hormonal factor. It includes microcytic hypochromic anemia, pernicious and other forms of anemia, and anemia of hypothyroidism, Addison's disease, and similar hormonal disorders. Medullary anemia is due to diminution or atrophy of the medullary tissue, replacement of the medullary tissue by pathological tissues, and hyperplasia of the hematopoietic tissues. It includes primary anemia, anemia secondary to either physical or chemical injury of the medullary tissues and the various forms of either myelophthisic or osteosclerotic anemia, from cancer metastases, lymphosarcoma and similar diseases and leukemia, multiple myeloma, xantomatosis, myelophthisis and myelosclerosis, respectively. Postmedullary anemia is caused by hemorrhage or by hemolysis caused by factors within or outside of the erythrocyte. Anemias of indefinite origin are due to several factors, concerned with the formation and maturation of the erythrocytes and the conservation of the erythrocytes in the blood. They include the various forms of the so-called secondary anemia and, also, the various forms of anemia from hypersplenism. This classification is simple, schematic, and practical.

Streptomycin in Pulmonary Tuberculosis.—Observations were made on a group of 873 adult patients with pulmonary tuberculosis who had streptomycin therapy and the results of the treatment were compared with those observed in the records of a similar group of 3,491 patients who were observed in the epoch prior to the discovery of streptomycin. Streptomycin therapy reduced the incidence of treatment failure from 2.6% to 0.3% in cases of minimal tuberculosis, from 24.8% to 15.5% in moderately advanced tuberculosis, and from 66.5% to 53.4% in advanced tuberculosis. In patients with either minimal or moderately advanced pulmonary tuberculosis and with microscopically demonstrable tubercle bacilli in the sputum, failure diminished from 5.7% to 0.0% and from 27.3% to 18.2%, respectively. For patients with moderately advanced tuberculosis and with tubercle bacilli in the sputum who were treated in the sanatorium, streptomycin reduced the failure rate from 26.9% to 13.9%. The authors conclude that streptomycin improves the immediate prognosis of the disease and shortens the period of rest. The immediate results of rest are better for patients with small pulmonary lesions than for those with extensive lesions. For lesions of the same extension, the prognosis is better when there is no cavitation. The presence of tubercle bacilli indicates a poor prognosis. The author advises further studies to determine the period of survival of patients after streptomycin therapy. Their cases were observed only from 1948 to 1950.

Schweizerische medizinische Wochenschrift, Basel

83:49-72 (Jan. 17) 1953. Partial Index

Investigation of Bacteria Pathogenic to Man in Milk Destined for Consumption in City of Zurich, with Particular Consideration of Bang's Brucella abortus. E. Hess.—p. 49.
Varieties of Wrist-Joint. T. Marti.—p. 52.
Normal Delivery of Healthy Baby Girl After Successful Treatment of her Mother with Radioactive Iodine for Metastatic Malignant Tumor of Thyroid. J. H. Müller and C. Brunner.—p. 54.
*Problem of Prenatal Sex Determination from Vaginal Smear. J. Artner and A. Koller.—p. 55.

Prenatal Sex Determination in Vaginal Smear.—Vaginal smears obtained from 725 pregnant women at four-week intervals were studied according to Papanicolaou's, Gram's and Best's glycogen staining techniques. Various types of vaginal smear were found indicating variations in hormonal conditions. Estrogen activity is manifested by increased cornification of the vaginal epithelium. Depending on the degree of estrogen activity, the following types of vaginal smears were observed: the "navicular" or normal type in 63.4%, the "cornification type" in 2.9%, the "precornification type" in 13.1%, the "cytolysis type" in 15.6% and the "inflammatory (pseudocornification) type" in 5%. The "cornification" and "cytolysis" types correspond to the "sex-specific" cytolytic and mucoid-cornified types, respectively, which had been described by Nieburg and Greenblatt, while the glycolytic type of these workers was not observed in the authors' material. A relationship between the various types of vaginal smears and the sex of the fetus could not be demonstrated. Of the 725 pregnant women, 453 were delivered during the study, and approximately the same percentage of the various types of vaginal smears was observed in the women who gave birth to a girl as in those who gave birth to a boy. Furthermore in the course of pregnancy the cytological appearance of the so-called sex-specific smears frequently changed, resulting in a "heterotypical" smear, i. e., a cytolysis type reverted to a cornification type and vice versa. An effect of sex-specific hormones of the fetus on the vaginal epithelium of the mother could be considered only if a sex-specific hormone production could be demonstrated in the fetal organism. Such a production would have to be large in order to exert a decisively modifying effect on the maternal vaginal epithelium. According to reports in the literature, the vaginal epithelium of the newborn shows a certain estrogen effect only for the period during which maternal hormones are still circulating in the blood of the infant. After a short time the estrogen content decreases considerably and the cytological aspect of the smears is characteristically atrophic and does not reveal any estrogen effect. Furthermore a detectable estrogen excretion occurs only in 12-year-old or older girls and in 13-year-old or older boys and a simultaneous excretion of estrogens and androgens may be observed in boys as well as in girls.

BOOK REVIEWS

Headaches: Their Nature and Treatment. By Stewart Wolf, M.D., Professor and Head of Department of Medicine, University of Oklahoma School of Medicine, Oklahoma City, and Harold G. Wolff, M.D., Professor of Medicine (Neurology), Cornell University Medical College, New York. Cloth. $2.50. Pp. 177, with 7 illustrations. Little, Brown & Company, 34 Beacon St., Boston 6, 1953.

The authors, who are well known for their studies of psychosomatic medicine, have written in nontechnical language a small book on headaches for the general public. The seven chapters deal with pain and headache mechanisms; headache due to brain tumor, injury, infections, intoxications, and hypertension; migraine; headache caused by tightness of muscles about the head and neck; and patients who have other symptoms along with headache. One chapter presents a verbatim account of an interview between a physician and a patient afflicted with migraine. This book is not a substitute for competent medical consultation and care; it is, however, a highly readable account of the physical and psychological factors responsible for headaches.

How Thin the Veil: A Newspaperman's Story of His Own Mental Crack-Up and Recovery. By Jack Kerkhoff. Cloth. $3.50. Pp. 311. Greenberg, Publisher, Inc., 201 E. 57th St., New York 22; Ambassador Books, Ltd., Toronto, Canada, 1952.

This is an interesting account by a former newspaperman of his own mental breakdown associated with alcoholism and of his improvement after voluntarily spending 45 days in a Michigan state institution.

The author describes a growing insight, through introspection, into causes of his own breakdown. He also relates his growth in developing satisfactory inter-relationships with patients who are suffering conditions similar to his own or more serious mental and emotional disturbances. During his stay the author develops a "love" relationship with another patient, "Susie," and intimates that this relationship was largely responsible for his improvement. The story is well written and should help to dissipate the fear and distaste that many persons feel in regard to hospitalization in a state mental institution.

Nursing in Diseases of the Eye, Ear, Nose and Throat: From the Manhattan Eye, Ear and Throat Hospital. Contributing editors: William B. Allan, M.D., et al. Ninth edition. Cloth. $4. Pp. 317, with 85 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London W.C.2, 1953.

This competent manual has been revised to include changes in the chapters on ocular therapeutics, external and internal diseases of the eye, and nursing procedures in eye conditions. Additional emphasis is placed on nursing care and nurses' duties in emergencies. The chapter on the ear has also been revised, and new material and illustrations have been added to the ear, nose, and throat section. This book is a most useful vehicle for teaching specialized nursing in the ophthalmologic and otolaryngological fields.

Physiologic Therapy for Obstructive Vascular Disease. By Isaac Starr, M.D., Martzell Research Professor of Therapeutics, School of Medicine, University of Pennsylvania, Philadelphia. Modern medical monographs 6. Cloth. $2.50. Pp. 38, with 4 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1953.

It is in the short monograph that medical writing today shows its most desirable form, for here the scope can be demarcated and the words cherished. The writer's personality is revealed, and there is none of the disunity caused by multiple authorship. Dr. Starr's very short book is a classic example of just this sort of monograph and is seasoned thought on one of the controversial problems in medicine.

The book is an expansion of the George E. Brown Memorial Lecture presented in 1952 and traces the development of therapeutic attitude toward peripheral vascular disease from Brown's time in the early twenties to the present. Dr. Starr played a part in much of this development. The proper place of heat and position, the use of the histamine test and color charts for estimating peripheral circulation, and especially the use of vasodilating drugs were particular problems in which he was interested. The author's position of being able to look back somewhat objectively enables him to make a sounder assessment of the subject than any short-term acquaintance would allow. This monograph is recommended highly, both for its content and for the example it sets in medical writing.

Organe mit innerer Sekretion: Kurzgefasstes Lehrbuch der Endokrinologie für Studierende und Ärzte. Von Dr. Josef Wallraff, Konservator und apl. Professor der Anatomie am Institut für Histologie und experimentelle Biologie der Universität München. Cloth. 14.40 marks. Pp. 162, with 155 illustrations. Urban & Schwarzenberg, Thierschstrasse 11, Munich 22; Meinekestr. 13, Berlin W. 15; Frankgasse 4, Vienna IX, 1953.

This brief introduction to the subject of endocrinology is intended primarily for the use of medical students. The author is an anatomist, which may account for the fact that the subject matter is limited almost entirely to an anatomic consideration of the endocrine organs, with only the briefest reference to the hormonal function of the glands and an occasional mention of clinical disorders. Although the anatomy of the glands is adequately discussed from the embryologic and morphological point of view, there is no attempt to correlate these aspects of the subject with present concepts of the role of endocrine functions in the animal economy; nor does the author include the recent histochemical studies that have preoccupied American workers in this field and added much to our understanding of endocrine activity.

Experimental Hypnosis: A Symposium of Articles on Research by Many of the World's Leading Authorities. Edited by Leslie M. LeCron. Cloth. $6. Pp. 483. The Macmillan Company, 60 Fifth Ave., New York 11, 1952.

With the exception of two previously published articles this book is a compilation of 20 original articles on various aspects of current research in hypnosis. In addition to writing one of the scientific contributions, the author has supplied editorial comment between the chapters. The chapters on "Extrasensory Perception and Hypnosis," by J. B. Rhine, and "Antisocial Uses of Hypnosis," by Paul C. Young, are particularly interesting and revealing. The book provides up-to-date research data on the various aspects of this important subject.

Handbook of Gynaecological Diagnosis for Practitioners and Students. By Walter Neuweiler, M.D., Professor of Midwifery and Gynaecology, University of Berne. Translated from German by Dr. Paul Ederer. Originally published under title Lehrbuch der gynäkologischen Diagnostik für Ärzte und Studierende by medizinischer Verlag Hans Huber, Berne. Cloth. $12. Pp. 448, with 406 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1952.

This book is limited to a discussion of gynecologic diagnosis and is not intended to compete with textbooks on gynecology. The first part of the book deals with practical methods of examination. The second part describes the symptoms of individual diseases and diagnosis in the same sequence as that followed in examination of patients. Chapters are devoted to endometriosis, vaginal discharge, sterility, and backache of gynecologic origin. The translation of this book from German into English is excellent. Nearly all of the numerous illustrations have been clearly reproduced. Some of the color illustrations are magnificent. Some subjects, however, have a disproportionate number of illustrations; for example, 39 illustrations devoted to hysterograms occupy 20 pages. There are five illustrations on the use of tents for dilatation of the cervix. These tents are rarely used in the United States. This book contains much useful information and can be used as a supplement to a standard textbook on gynecology.

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

QUERIES AND MINOR NOTES

HEPATITIS AND POLIOMYELITIS

To the Editor:—*A multipara was spontaneously delivered of full term twin girls on July 11, 1952. Eleven days later a postpartum hemorrhage occurred, necessitating shock therapy and hospitalization. A plasma infusion was given while awaiting cross-matching. The patient continued to bleed despite administration of ergot, posterior pituitary, binders, and two transfusions. After 24 hours, dilatation and curettage were done, during which procedure blood was given and necrotic placental tissue was removed. The patient made a nice recovery until about Nov. 1, 1952, when a severe icterus was noticed, a nontender enlarged liver was easily palpated, and the patient had a fever of 101 F. One of the blood donors used had poliomyelitis at the age of 15 months. He later had orthopedic correction of the flail ankle and foot and is now 29 years of age. Did his history of poliomyelitis preclude his being used as a donor for our blood bank system?* *M.D., Minnesota.*

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—The virus of poliomyelitis, unlike the agent of serum hepatitis, is not found in the blood of infected persons over a long period. From recent animal experiments, it seems likely that there is a transient viremia during the incubation period of poliomyelitis (Bodian, D.: *Am. J. Hyg.* **55**:414-438 [May] 1952). Actually, recovery of poliomyelitis virus from human blood has been reported in only two instances and never beyond the early stages of the acute illness. Serum of convalescent patients neutralizes the infecting type of virus, and there is no reason to believe that the virus reappears in the blood at any later time. Even if it did, the known types of poliomyelitis virus are not related to the agents causing hepatitis. There is no known reason why a history of poliomyelitis should disqualify anyone from serving as a blood donor. In the case of jaundice described by this correspondent, the fact that one of the donors had a history of poliomyelitis some years previously would seem to be incidental and irrelevant.

Answer.—It is, of course, possible that this patient may have contracted serum hepatitis from either the transfusions or the plasma she received. On statistical grounds, it would be much more likely that the plasma had transmitted the icterogenic agent. As the British experience showed, the hazard from individual transfusions is relatively small, while with the use of plasma, the incidence of serum hepatitis increases in direct proportion to the number of donors to the particular pool from which the plasma was prepared. It is impossible to say that the donor for the transfusion given is not a carrier of a hepatitis virus; the only way in which the matter could be proved would be by inoculating volunteers with his serum. There is no reason to believe that poliomyelitis virus is in any way related to that of hepatitis. There would be no reason to have excluded this man as a donor, but his blood should be used again only with some reservations.

THE LIE DETECTOR TEST

To the Editor:—*How reliable is the "lie detector test?" I am trying to protect an innocent person.* *M.D., Michigan.*

Answer.—The question as stated is similar to asking "How reliable is a microscopic examination?" Both questions necessitate clarification as to the qualities of the instrument and the training and experience of the examiner. Consequently, this answer refers only to examinations conducted with apparatus that meets the standards set by the International Society for the Detection of Deception. Briefly, this society requires that the apparatus record on a moving strip of paper the rhythm and depth of respiration, the pulse rate and fluctuations of blood pressure, and preferably also the electrodermal response. The qualifications required of the examiner are even more demanding. He should be a person who has had a good basic training in the construction and operation of the instrument, in psychology, physiology, and general police work, and long experience in interrogation with the aid of the lie detector. Of course, complete and utter integrity is a primary requirement. If these standards, with respect to apparatus and examiner, are completely met, the lie detector test has a high degree of reliability.

One of the important factors to be considered is that certain persons are not proper subjects for this type of interrogation, but a qualified examiner usually has little difficulty in determining this. Feebleminded persons or persons suffering from acute infections of any nature or from certain types of chronic heart or lung disease may be unsatisfactory subjects. Experience gained in the use of this examination for the past two decades seems to indicate that, when mistakes in interpretation are made by the examiner, they are generally in favor of the subject rather than against him, but a review of the cases of the well-qualified examiners indicates that proved mistakes and errors are few. The determination of truthfulness or deception made by a well-qualified examiner using an instrument that meets the standards has a high degree of reliability.

MAGNESIUM SULFATE INJECTIONS

To the Editor:—*In* The Journal *July 26, 1952, page 1264, is a question on the pharmacology of magnesium sulfate. The reply speaks only about its use in toxemias of pregnancy. Please discuss its use in other conditions? What is the usual strength used intravenously? What effect has a magnesium sulfate injection on the circulation and on general metabolism? Can it be used in old coronary conditions? Will it help the elimination of waste products? What is the difference pharmacologically between magnesium sulfate and magnesium gluconate? What local reaction occurs when 10 to 20 cc. of a 50% solution is injected intramuscularly? I have given magnesium sulfate injections (10 and 20% solutions) intravenously and have never seen respiratory embarrassment or hematuria.* *M.D., South Africa.*

Answer.—Intravenous injection of magnesium sulfate is regarded as a hazardous procedure, to be used only when adequate blood magnesium levels cannot be reached by intramuscular, subcutaneous, or rectal administration. It is generally recommended that the injection be given slowly, that calcium gluconate or chloride be available as an antidote, and that concentrations no higher than 10% be used. In the treatment of paroxysmal ventricular or auricular tachycardia, however, 10 to 20 cc. of a 20% solution may prove effective when the usual therapeutic measures fail, while rapid injection of 25 to 30 cc. of a 25% solution was reportedly used without ill effects for the prevention of traumatic complications in convulsive shock therapy. Parenterally administered magnesium sulfate has been used to relieve convulsions in tetanus and to relieve convulsions and lowered blood pressure in nephritis and eclampsia. It is usually administered intramuscularly or subcutaneously but can be given intraspinally (0.1 cc. per kilogram of body weight of a 25% solution) or intravenously (500 cc. of a 2% solution in adults and 100 to 200 cc. of a 1% solution in children). Parenterally administered magnesium salts have also been used intravenously to relieve muscle spasm, hypertension, and pain following spider bites (20 cc. of a 10% solution of magnesium sulfate) and to relieve or prevent oxytocic-induced uterine tetany (10 cc. of a 20% solution of magnesium sulfate or

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The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

gluconate). Owing to its depressant action, magnesium sulfate is probably undesirable in the presence of marked myocardial damage, although it has been used in coronary sclerosis without ill effects.

Injection of therapeutic doses of magnesium sulfate causes cutaneous vasodilatation manifested by flushing, perspiration, and a feeling of warmth. Blood pressure may or may not fall in the normal subject or in the patient with chronic cardiovascular disease, presumably depending on whether the effect of cutaneous vasodilatation is counteracted by contraction of splanchnic or somatic vessels. When a fall occurs, it is usually precipitous and accompanied by nausea, thirst, restlessness, and apprehension. In eclampsia and acute nephritis, the blood pressure usually falls promptly. The vascular effect is generally attributed to both a central depressant effect of magnesium on the nervous system and a local antispasmodic effect on the smooth muscle of the small blood vessels. In near toxic doses, depression of cardiac muscle plays a role. High blood magnesium concentrations cause profound depression of all portions of the central nervous system and of the peripheral neuromuscular apparatus, a moderate hyperglycemia and glycosuria, and an increased urinary excretion of calcium. Parenterally administered magnesium salts exert little or no cathartic or diuretic action: their value in nephritis is due to their antispasmodic and central depressant action and not to any increased excretion of the waste products of metabolism. Magnesium sulfate and magnesium gluconate elicit comparable effects when administered parenterally, since the magnesium ion is responsible for the depressant action of the salts. On oral administration, the cathartic effect of the gluconate would probably be less than that of the sulfate, because the poor absorbability of the sulfate ion contributes to its osmotic action. Following local injection of the drug, there is local anesthesia, owing to the depressant action of magnesium on nerve fibers, which minimizes pain of administration by this route. The drug is then gradually absorbed into the blood stream and rather rapidly eliminated, almost entirely by the kidneys. In the presence of renal disease, excretion is delayed and the hazard of magnesium toxicity increased.

SLEEP AND MUSCLE RELAXATION

TO THE EDITOR:—*When sleep overcomes a motor vehicle driver, do the muscles of the hands and fingers completely relax before sleep intervenes, or do these two conditions occur simultaneously? My contention is that extremities relax first; if this is correct, what length of time elapses between relaxation of the muscles in the hands and the occurrence of sleep?*

Joseph T. Livoti, M.D., Brooklyn, N. Y.

This inquiry was referred to two consultants, whose respective replies follow.—ED.

ANSWER.—The inquirer's contention that extremities relax first is not correct. It is true that ordinarily general muscular relaxation precedes and, indeed, is conducive to the onset of sleep, but the two may run a parallel course, or the order may be reversed. Furthermore, some muscles may remain contracted during sleep. In essentially arborial primates, preservation of the manual grip (as on a limb of a tree) is compatible with fairly deep sleep. In the human species, this is especially manifest in infants and young children, who often sleep with their fists tightly closed. Data on what actually occurs during an automobile accident, resulting from the driver's falling asleep, are not available. The nearest observational situation pertinent is that in which a subject was instructed to hold a light spool between two fingers as he was going to sleep. At a certain moment the spool would be released from his grip. Using the disappearance of the alpha brain wave rhythm as denoting the cessation of frank wakefulness, the subject could recall having dropped the spool if this happened 0.5 to 1.5 (mean, 1.1) seconds later but not if it happened 6.5 to 25 (mean, 14) seconds later. This means that the muscles of the hand relax rapidly after the alpha rhythm is gone, reaching a critical low before or after consciousness is completely lost. Thus, if the driver is not jolted into regaining control of the car, one must conclude, on indirect evidence, that dozing or light sleep precedes the relaxation of his grip on the wheel, the delay amounting to several seconds.

ANSWER.—The experiments of Blake and Gerard (*Am. J. Physiol.* **119**:692, 1937) showed that the brain waves indicating the onset of sleep occurred at the same time as did muscular relaxation, as judged by the falling of an object held between the fingers. The answer to the question is, therefore, that sleep and relaxation occur essentially simultaneously.

ACROPARESTHESIA

TO THE EDITOR:—*A 51-year-old woman passed through the menopause without much trouble, but for several years she has had an unpleasant sensation in her hands and forearms on awakening. It is the same sensation one experiences when his foot goes to sleep. It is usually felt more in the right hand and does not seem to be related to the patient's resting position. The severe sensation disappears in a few minutes, but there is some aching all day, especially on lifting a weight. The patient is somewhat overweight. X-ray shows no cervical rib. Is this sensation related to the circulation in the arms or to the nerves? How can this condition be remedied?*

M.D., Tennessee.

ANSWER.—The condition is known as acroparesthesia. Although described by Schultze in 1893, little is known today of the well-recognized type occurring in women after the menopause. It is sometimes called sleep tetany or sleep rheumatism. There is no paralysis or change in reflexes; the condition is entirely sensory in its symptomatology. The onset usually is gradual, with progress by remission and relapse. The symptoms may last for years. A complete spontaneous remission is possible.

Similar sensations are experienced by patients who have combined system disease associated with pernicious anemia, vitamin deficiency, polyneuritis, multiple sclerosis, arthritis, Raynaud's syndrome, hysteria, spinal cord tumor, and cerebral thrombosis or, indeed, any disease that causes damage to peripheral nerves, their ascending pathways in the posterior columns of the spinal cord, the thalamic nuclei, or the parietal sensory cortex. All these conditions must be considered in a differential diagnosis, but most of them are easily eliminated in a patient having only the characteristic clinical symptoms seen in Schultze's disease.

Although the condition was formerly classified by Cassirer under the term vasomotor trophic neurosis, cases in which there is evidence of circulatory change, such as blanching, reddening, or cyanosis during attacks, should not be put in the category of acroparesthesia. Some cases, as noted by Wartenberg and described as brachialgia statica paraesthetica, are due to compression during sleep of the brachial plexus by a normal first rib. Women who do work to which they are unaccustomed may develop acroparesthesia, probably, as noted by Walshe in his study of cases in war workers, on the same basis. The condition is frequently found in washer-women. It is not considered a form of neurosis.

Treatment is symptomatic. Prolonged rest in splints worn at night has been advised. Section of the scalenus anticus muscle is not indicated. Elevation of the shoulders and head during sleep may give relief. Vitamin therapy has not proved helpful. Decompression by resection of the first rib should be considered in prolonged and intractable cases. The use of estrogenic preparations has not brought relief. The effect of cortisone or corticotropin has not been evaluated.

PREGNANCY IN AMPUTEES

TO THE EDITOR:—*Please discuss the pregnancy and delivery of women who have artificial legs.*

W. J. Holden, M.D., Omaha.

This inquiry was referred to two consultants, whose respective replies follow.—ED.

ANSWER.—The pregnancy and labor of a woman with an amputated leg should not differ from that of a normal woman, unless she has symptoms of phantom limb. An example of this complication is reported by G. A. Williams (*Am. J. Obst. & Gynec.* **50**:546, 1945). After her leg amputation, the patient's first pregnancy and labor were uneventful. In the fifth month of her next pregnancy, 13 years after her leg amputation, she experienced the sensation of painful movements in her amputated

foot and ankle, associated with painful clonic movements of her stump. Violent 2 to 3 minute contractions of the flexors and adductors of her stump also occurred. In addition, she experienced violent expulsive abdominal efforts simulating those of the second stage of labor but with no uterine contractions or other signs of labor. Caudal anesthesia administered twice gave only temporary relief. Local anesthesia of the "trigger area" of the stump finally stopped the symptoms. Labor at term was uneventful. On the fourth postpartum day painful contractions of the stump recurred. Analgesic drugs were ineffectual, complete relief being secured again by local anesthesia of the stump.

ANSWER.—The most important aspect is mobility of the limb. If the legs can be properly spread apart or even if one of them can, delivery can usually be accomplished with ease. It is more satisfactory if the limb bends at the knee but not essential. It is much easier to have assistants hold the legs during the delivery instead of using stirrups. If the stump is short and hard to control, the artificial limb should be kept on during delivery. Very little change in routine is necessary during pregnancy. The patient should be more careful of falling, especially during the last trimester when some clumsiness is the rule. The average weight gain of pregnancy places a strain on these women, and weight gain should be restricted. A word should be said about the cause of amputation. Traumatic amputation needs no special consideration, but if a patient lost a limb because of fibrillation and thrombosis, this condition should be thoroughly evaluated.

SOLITARY NODULES OF THYROID

TO THE EDITOR:—*What is the consensus regarding the management of solitary nodules of the thyroid gland? I have a patient with a solitary nodule of the right lobe of the thyroid gland. The nodule is hard, smooth, circumscribed, and located at the junction of the isthmus and the right lobe. It is tender on palpation, and the patient experiences slight pain on deglutition. The lesion has been present for three weeks. The patient is a 43-year-old white man otherwise in good health. There is no evidence of either hyperthyroidism or hypothyroidism.*

Robert B. Benjamin, M.D., Hood River, Ore.

ANSWER.—Most surgeons agree that solitary nodules of the thyroid should be removed, particularly in young people. Exceptions to this occur perhaps in older persons in whom the nodule has remained unchanged in size for many years. Regardless of change in size, all younger persons should have firm solitary nodules removed. Most adenomas and carcinomas of the thyroid do not cause pain or tenderness. When pain or tenderness is a leading symptom, one must always think of the possibility of hemorrhage into an adenoma or of thyroiditis. Sometimes localized areas of thyroiditis occur and later spread to involve more of the gland. If the area appears to be increasing to involve more and more of the lobe, the diagnosis probably is thyroiditis, and the treatment should be about 800 r of x-ray therapy. If, on the other hand, the nodule remains the same size, it is most likely a hemorrhage into an adenoma and, under the circumstances, removal of the adenoma would be justified.

SEVERE CERVICAL LACERATION

TO THE EDITOR:—*A 22-year-old woman sustained a severe cervical laceration when she gave birth to a 9 lb. (4,082 gm.) baby. The laceration was not repaired. I first treated the patient one year ago, advising that she have the laceration repaired before she became pregnant again. She did not do so and is now two months pregnant. The laceration extends out the side of the cervix. Is there danger of increased hemorrhage at delivery in such a patient? If so, is the danger serious enough to warrant cesarean section, as another physician has advised? I have never had an obstetric patient with as extensive an old laceration.*

Ellis V. Browning, M.D., Springerville, Ariz.

ANSWER.—This case demonstrates one of the reasons for inspecting the cervix of all women immediately following delivery and repairing any lacerations that may be present. The size of the baby has little to do with occurrence of cervical lacerations. They are commonly associated with precipitate labor, such as follows the improper use of pituitrin or as occurs with such conditions as abruptio placentae. They commonly occur in patients who are delivered before complete dilatation of the cervix occurs or in those in whom the cervix is manually dilated or in forceps operations in which the cervix is caught in the blade or the forceps are applied before dilatation is complete.

If a severe laceration is present, the patient should be advised strongly to have it repaired; however, repair should not be done during pregnancy, unless the patient has had several abortions or premature deliveries. The best course in the case described would be to allow the patient to carry on to term or for as long as the cervix will permit and not to worry too much about the cervix during delivery. Unless other indications are present, Cesarean section does not seem indicated. This patient should be watched carefully more because of the probability of rapid labor than because of worry over extension of the cervical tear or bleeding. Rarely, there occurs a cervical dystocia in which the cervix will not dilate and feels fibrous to rectal or vaginal palpation. In these cases tears sometimes occur, but such cases can usually be detected during labor. At the time of delivery, the cervix should be inspected and the cervical laceration freshened up and repaired. If bleeding does occur, it usually can be controlled easily by applying ring forceps over the cervix at the point of bleeding. If bleeding is alarming, a tight pack can be applied to the bleeding area or it can be controlled by finger pressure until the abdomen can be opened and the uterus removed. The patient should be delivered in the hospital, where facilities for repair of the cervix are present. She may be expected either to deliver prematurely or to have a short labor (1st stage) if she has a normal-sized baby.

HUMAN MILK SUPPLY

TO THE EDITOR:—*Is there a medicament available that will increase human milk supply? About two years ago, there was an article in the lay press about a South American herb capable of doing this. Is this safe, and is it available?*

Bernard L. Pelton, M.D., Long Beach, Calif.

ANSWER.—If there is not sufficient milk in the breasts, an attempt may be made to stimulate the secretion with an electric or water breast pump, but the best stimulant is a vigorous infant. Theoretically, the pituitary hormone, prolactin, should stimulate milk production, but, thus far, only a few controlled experiments have been performed, with indefinite results. There is no known South American herb that has been scientifically proved useful.

NO TESTES IN SCROTUM

TO THE EDITOR:—*A 19-year-old boy has no testicles in the scrotum. His development otherwise has been normal. What treatment for the azoospermia of his ejaculate is advised? Is the danger of malignant transformation in his testicles sufficient to justify exploration and orchidectomy?*

Frederick A. Schurmeier, M.D., Elgin, Ill.

ANSWER.—Undescended testes, whether in the inguinal canals or in the abdominal cavities, may produce enough androgen to cause a considerable amount of development of secondary sex characteristics, such as growth of the penis and some development of pubic and axillary hair. Intra-abdominal testes do not produce spermatozoa, and testes in the inguinal canals rarely do so. The testis can function normally only in the environment of the scrotum. This patient probably will be sterile permanently. Even though undescended testes may produce a considerable amount of androgen, the production is usually subnormal, and there are always deficiencies in the development of secondary sex characteristics. The pubic and axillary hair is a little scanty, there is little or no hair on the chest and abdomen, and the beard is usually sparse. Muscle development is usually feminine in type, and the weight is likely to be less than normal. Undescended testes are a little more likely to give rise to carcinoma

than testes in the scrotum; however, the danger of development of carcinoma is relatively slight, and, from this point of view alone, operation is not justified.

This patient should be examined very carefully by an expert in this field to determine whether the testes can be palpated. If they can be palpated, it may be possible to bring them into the scrotum by operative procedures, but even if they are brought into the scrotum, it is unlikely that spermatogenesis will occur. Every effort should be made to induce maximum development of secondary sex characteristics by the administration of androgen.

FAT ATROPHY FOLLOWING INSULIN INJECTIONS

To the Editor:—*Is there any prevention for the fat atrophy that follows subcutaneous injection of insulin? A patient varies the sites properly, and the condition occurs with mixed insulin, protamine zinc insulin, and isophane insulin. Is there any way to encourage regeneration of this fatty tissue?*

M.D., Texas.

Answer.—Atrophy of subcutaneous fat has been shown to occur in susceptible persons irrespective of the type and pH of the insulin used or the site of injection. It is relatively common. In one large series of diabetic patients, it was found to occur in 44% of those under age 20 and in about 15% of those 20 years of age or older. In patients under 20, atrophies were only slightly commoner in females than in males, whereas in those 20 years of age and over, the incidence among females was almost seven times as great as among males. There is some evidence to suggest that the disappearance of fat represents a local metabolic effect of insulin. Various methods have been suggested for the avoidance of insulin atrophies. The incidence may be less if insulin at room rather than refrigerator temperature is injected. Although at present no certain protection from atrophies may be promised, the following suggestions to patients may help: 1. Deposit the insulin beneath or at least in the lower layers of the subcutaneous fat and not superficially. 2. Constantly shift the site of injection so that no one area of 2 cm. in diameter receives insulin oftener than every three or four weeks. 3. If known to be susceptible to atrophies, avoid the arms and legs for injections, and use those parts of the body not exposed to public view, such as the abdominal wall, flanks, and buttocks. If, despite all precautions, atrophies do occur, patients may be reassured as to the benign character of the condition. The chief disadvantage is cosmetic. Only the fat and no truly important tissue, such as muscle or nerve, is affected. As for regeneration of fatty tissue, in many patients the fat will be restored over months or years if the areas of atrophy are avoided for future injections. Some workers have suggested that injection of insulin into the depths of areas of atrophy be continued, stating that the lost subcutaneous fat is thereby gradually restored; however, this has not been the experience of certain other workers, and further data along this line are needed.

TYPES OF HYPERGLYCEMIA

To the Editor:—*What is the significance of performing an intravenous glucose tolerance test simultaneously with determination of an inorganic phosphorus curve? Is this a practical way for differentiating types of hyperglycemia due to diabetes mellitus, liver disease, and pituitary dysfunction?*

M.D., Texas.

Answer.—Following the administration of glucose to a normal subject, the serum phosphorus level falls, presumably reflecting withdrawal of this element for use in the phosphorylation process. This decrease in phosphorus does not take place in the depancreatized animal or in the person with severe diabetes. Patients with mild diabetes may exhibit a fall in blood phosphorus during a glucose tolerance test similar to that seen in normal persons so that the test is not useful for diagnosis in the borderline situations. Regarding the fall in the blood phosphorus level as an index of peripheral utilization of glucose, some have attempted on this basis to differentiate between true diabetes mellitus and so-called "liver diabetes," in which hepatic dysfunction is considered responsible for the hyperglycemia and glycosuria observed. It has been reported (*Proc. Am. Diabetes A.* **9**:99, 1949) that in "liver diabetes" a normal fall in blood phosphorus is obtained following administration of glucose. Despite the apparently sound theoretical basis for the differentiation, many consider it hazardous in clinical practice to attempt to separate true diabetes from "liver diabetes" in this way. Results are not often clear-cut and are frequently difficult to interpret. Consequently, from a practical standpoint, any patient with hyperglycemia and glycosuria, even though liver disease or pituitary dysfunction is present, should be treated with insulin in such dosage as is found necessary to control the metabolic abnormalities. Such patients should be followed carefully over months or years so that proper diagnosis may eventually be possible and the patient protected.

ANGINA PECTORIS

To the Editor:—*When hurrying on level ground or rapidly climbing a flight of stairs, a powerfully built, 65-year-old man is seized with pressure in the chest and dyspnea, both of which pass after he rests a few moments. The sensation is smothering but not painful; there is no radiation. Physical examination reveals an apparently normal heart, with a rate of 68 beats per minute. The blood pressure is 122/78. Examination of the lungs reveals, at both bases, a few crackling rales that tend to diminish with deep breathing. The electrocardiogram is within normal limits. A roentgenogram of the chest shows a heart of normal size, mild emphysema compatible with this patient's age, and increased density in both bases of the lungs, due to chronic bronchitis and probably minimal bronchial dilatation. The patient claims that, standing still, he can lift a weight of 150 lb. to shoulder level without any discomfort. Is there any information on the relative work that is performed in lifting a heavy weight several times as compared to that performed in hurriedly going up a flight of stairs or on the oxygen debt accumulated in these two operations? Why should this man regard the lifting of heavy objects with equanimity but tremble before a flight of stairs?*

M.D., Pennsylvania.

Answer.—The symptoms in this case would seem to indicate angina pectoris on effort and, quite possibly, some dyspnea on effort due to the emphysema. It is not likely that neurocirculatory asthenia is the explanation. If there is definite doubt, an exercise test both under observation and through its effect on the electrocardiogram should be carried out. In general, the use of the arms is less of a strain than the use of the legs. It is quite common to find that some persons can exercise their arms without angina pectoris but cannot walk fast on a level surface or go up a hill of more than the shortest distance without having angina pectoris if they have coronary insufficiency.

CHRONIC URETHRITIS IN THE FEMALE

To the Editor:—*Chronic urethritis with narrowing in the female is seen commonly in office practice, but little is written about it in the literature, especially as regards treatment. I would appreciate any information you can give me about this condition.*

Holloway Bush, M.D., Macon, Ga.

Answer.—Cicatricial changes in the female urethra resulting from chronic infection are frequently observed. The consequent constriction is not usually of great degree. Annular constriction, which is often observed in the male urethra, does not usually occur. In the treatment of chronic urethritis in women, dilatation of the constricted urethra is of basic importance. It is true that this lesion has not been described in recent literature, but years ago it was widely discussed among gynecologists. Dr. Guy Hunner wrote many articles claiming that stricture in the female urethra resulted from external foci of infection. This subject was referred to in a recent textbook written by Novak and Novak. A detailed discussion of chronic urethritis appears also in the references given below.

References

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